HUGHES INFORMATION TECHNOLOGY SYSTEMS

ADDENDUM NOTICE

EOS Core System (ECS) Project Contract No. NAS5-60000

September 8, 1997

Document No.: 420-TP-015-002

Title: B.0 Implementation Earth Science Data Model for the ECS Project

Enclosed please find addendum pages for the subject document. Please add the following pages:

Insert

AD-1 and AD-2

If you have any questions, please contact our Data Management Office at (301) 925-0510.

Addendum

The following classes and descriptions should be added to section 2.1.1 of this document.

CoordinateSystemContainer

A container class (no data content) covering the range of descriptive information held at the collection level concerning the spatial system used for each granule in the collection. Primarily used to establish context within the module.

GPolygonContainer

This class contains the G-Ring characteristics which denote the latitude and longitude of a clockwise series of points, which when connected form a polygon. The minimum number of segments is 3. The exclusion ring flag is added to each polygon definition to describe whether the polygon is an 'inner' or 'outer' ring of coverage—outer rings describe the full coverage extent, while inner rings denote areas of missing coverage within the outer ring. Each set of values must contain exactly two sets of point values (one for latitude and one for longitude).

HorizontalCoordinateSystemContainer

A container class (no data content). This class is used to add context to the module.

HorizontalSpatialDomainContainer

A container class (no data content). This class is used to add context to the module.

PlanarCoordinateSystem

A container class (no data content) used to encapsulate Map Projections, Guides, and Local Planar Systems.

PlanarCoordinateSystemContainer

This class is used to add context to the module (no data content). This container is made up of the distance and angles, which define the position of a point on a reference plane to which the surface of the Earth has been projected.

SpatialDomainContainer

A container class (no data content) used to add context to the module.

VerticalCoordinateSystemContainer

A container class (no data content) used to provide context to the module. The reference frame or system from which vertical distances (altitudes or depths are measured).

This page intentionally left blank.

HUGHES INFORMATION TECHNOLOGY SYSTEMS

ERRATA NOTICE

EOS Core System (ECS) Project Contract No. NAS5-60000

September 8, 1997

Document No.: 420-TP-015-002

Title: B.0 Implementation Earth Science Data Model for the ECS Project

Enclosed please find change pages for the subject document. Please replace the pages as follows:

Remove	Insert
2-3/2-4	2-3/2-4
2-7 through 2-10	2-7 through 2-10
2-35 through 2-38	2-35 through 2-38

If you have any questions, please contact our Data Management Office at (301) 925-0510.

420-TP-015-002

B.0 Implementation Earth Science Data Model for the ECS Project

Technical Paper

May 1997

Prepared Under Contract NAS5-60000

RESPONSIBLE ENGINEER

Charles E. Gross /s/ 5/30/97

Charles Gross, Data Engineering Date
EOSDIS Core System Project

SUBMITTED BY

Ramsey Billups /s/ 5/30/97

Ramsey Billups, Release B CCB Chairman Date
EOSDIS Core System Project

Hughes Information Technology Systems
Upper Marlboro, MD

This page intentionally left blank.

Abstract

This technical paper contains the Earth Science Data (Conceptual) Model, which organizes and describes the metadata for the Earth Observation System Data and Information System Core System (ECS) for the Release B.0 Implementation design. This technical paper represents design modifications to the Release B.0 Earth Science Data Model published in February 1997 (Reference 420-TP-015-001). The Data Model includes diagrams that graphically illustrate the relationships of classes, the attributes contained within the classes, the characteristics of the relationships between classes, and the attribute specifications. The diagrams and specifications which were previously products of the Interactive Development Environment (IDE)/Object Modeling Technique (OMT) Computer Aided Software Engineering (CASE) Tool, have changed to products of S-Designor, an Entity Relationship Diagram (ERD) representation. The specifications are defined in alphabetical order for cross reference to the diagrams.

The relationships and information among the data objects are described as they are understood and used within the Earth Science Community.

Keywords: Database, Design, Specifications, Dictionary, Metadata, Data, Model, ESDT, CSDT, Files, Directory, Inventory

This page intentionally left blank.

Change Information Page

List of Effective Pages	
Page Number	**Issue**
Title	Final
iii through viii	Final
1-1 through 1-2	Final
2-1 through 2-138	Final

Document History			
Document Number	**Status/Issue**	**Publication Date**	**CCR Number**
420-TP-015-001	Original	February 1997	97-0177
420-TP-015-002	Final	May 1997	97-0812

This page intentionally left blank.

Contents

This page intentionally left blank.

1. Introduction

1.1 Purpose

The purpose of this technical document is to provide modifications to the Release B.0 Earth Science Data Model for the ECS Project (420-TP-015-001) which illustrate, specify, and communicate the design of the ECS earth science metadata. This technical paper represents the Release B.0 Implementation design of the ECS earth science data model, useful to designers, developers, and managers. The earth science metadata model represented in this document is a practical means of assuring the consistency of data requirements across subsystems and releases, and supporting the data standardization necessary for total system interoperability within a heterogeneous open systems environment.

1.2 Organization

This paper is organized in accordance with ESDIS standard format. A description of the document content follows:

- Section 2 contains the B.0 Implementation Earth Science object model, class descriptions, and attribute specifications.

Questions regarding technical information contained within this Paper should be addressed to the following ECS contacts:

- Charles Gross, Data Engineer, (301) 883-4064
- Amanda Wingo, Data Engineer, (301) 925-0815
- Karl Cox, Science Office, (301) 925-0537

Questions concerning distribution or control of this document should be addressed to:

Data Management Office
The ECS Project Office
Hughes Information Technology Systems
1616 McCormick Drive
Upper Marlboro, MD 20774-5372

This page intentionally left blank.

2. B.0 Implementation Earth Science Data Model

2.1 B.0 Implementation Earth Science Data Model: ERD Diagrams

The B.0 Implementation Earth Science Data Model consists primarily of metadata that can be mapped to the upper layers of the data pyramid. This metadata describes the details of large amounts of data that are generally associated with the remaining levels of the data pyramid and archived in various media and format. Data other than metadata are pointed to in the diagrams (e.g., Granules for Levels 0 through 4, Documents, Algorithms, Production History, Statistics.)

Primary implementation modifications since the B.0 Earth Science Data Model for the ECS Project (420-TP-015-001) are listed below:

- Graphical representation changed to Entity - Relationship Diagrams (ERD)
- Reassigned of QA Flags to allow variation by measured parameter
- Removed association of LocalityValue and GranuleLocality
- Separated of Spatial and Temporal keyword classes
- Clarified of Vertical Spatial Domain
- Modified association of Orbit Parameter Granule
- Renamed Processing History to Production History
- Changed the optionality of Zone Identifier
- Added association between ECS Granules and PSA Characteristics
- Changed association to 'OR' between SingleDateTime and RangeDateTime
- Modified DAP model to conform with physical schema

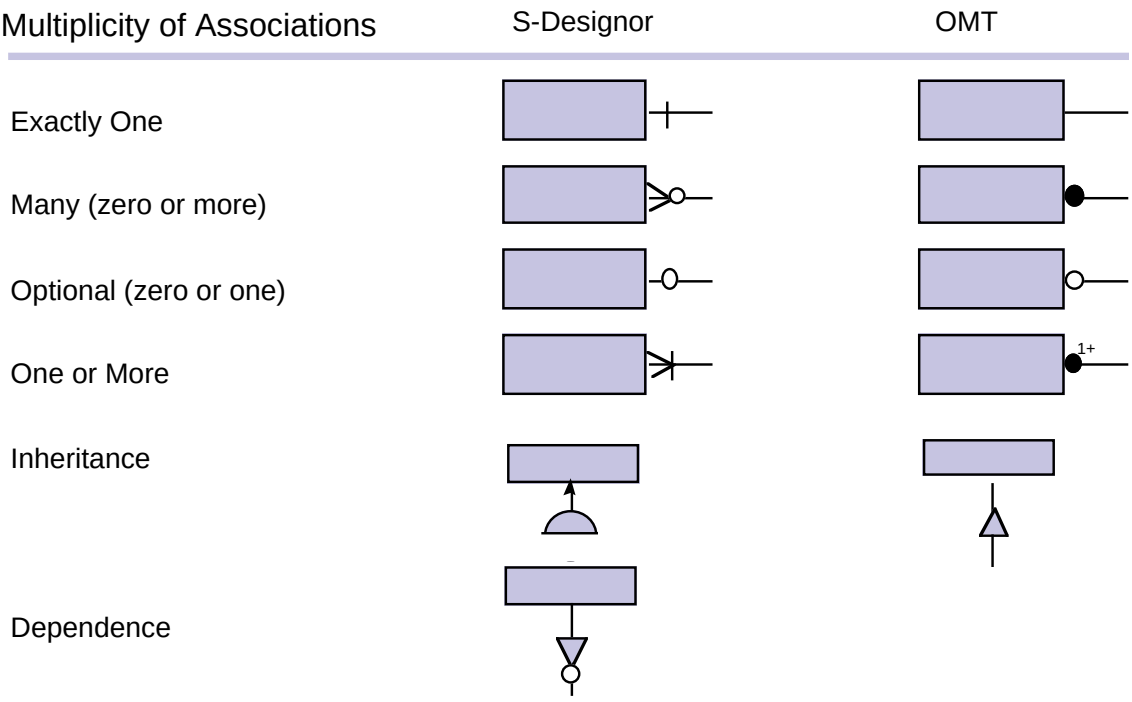
The Earth Science Data Model is very large and not suited to be displayed legibly in a single diagram (global diagram – Figure 2-2); therefore, it is logically segmented into modules for the purpose of readability. The eight modules, when concatenated, represent the entire Earth Science Data Model.

Offpage connectors are included in the the global diagram (Figure 2-2), as required, to allow for relationships to classes within various other modules. Offpage connectors are not, however, included in the diagrams of the submodules (Figures 2-3 through 2-10). Offpage connectors are also used to relate the data that involve classes of data that are not in the Earth Science Data Model. Those attributes having the term "pointer" included in the attribute name indicate that a data object is external to the metadata and a link to the data object must exist.

In this section the various modules are represented by Entity-Relationship Diagrams (ERD) diagrams (Figures 2-2 through 2-10), generated from the S-Designor tool. The specifications for the attributes within each class are found in Section 2.1.1.

An explanation of the differences in representation between ERD (S-Designor) and OMT is presented in Figure 2-1.

ERD Mapping (S-Designor to OMT)



Terminology Mapping

S-Designor	OMT
Entity	Class
Data Item	Attribute
Entity Relationship Design (ERD)	Object-Modeling Technique (OMT)
Relationship	Association
Inheritance	Inheritance
Domain (list of valids)	Domain Value

Figure 2-1. ERD Mapping

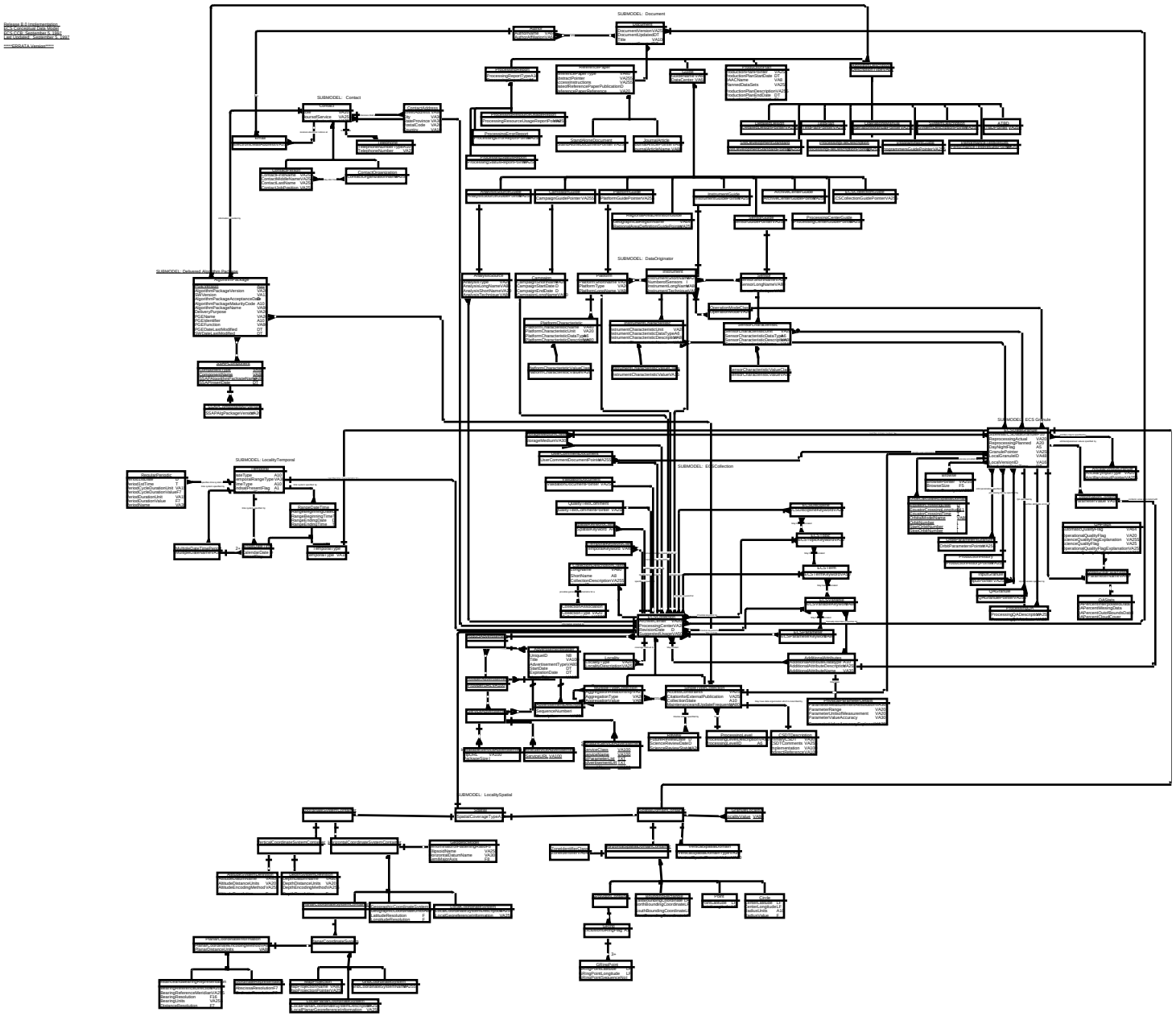


Figure 2-2. B.0 Implementation Global Model

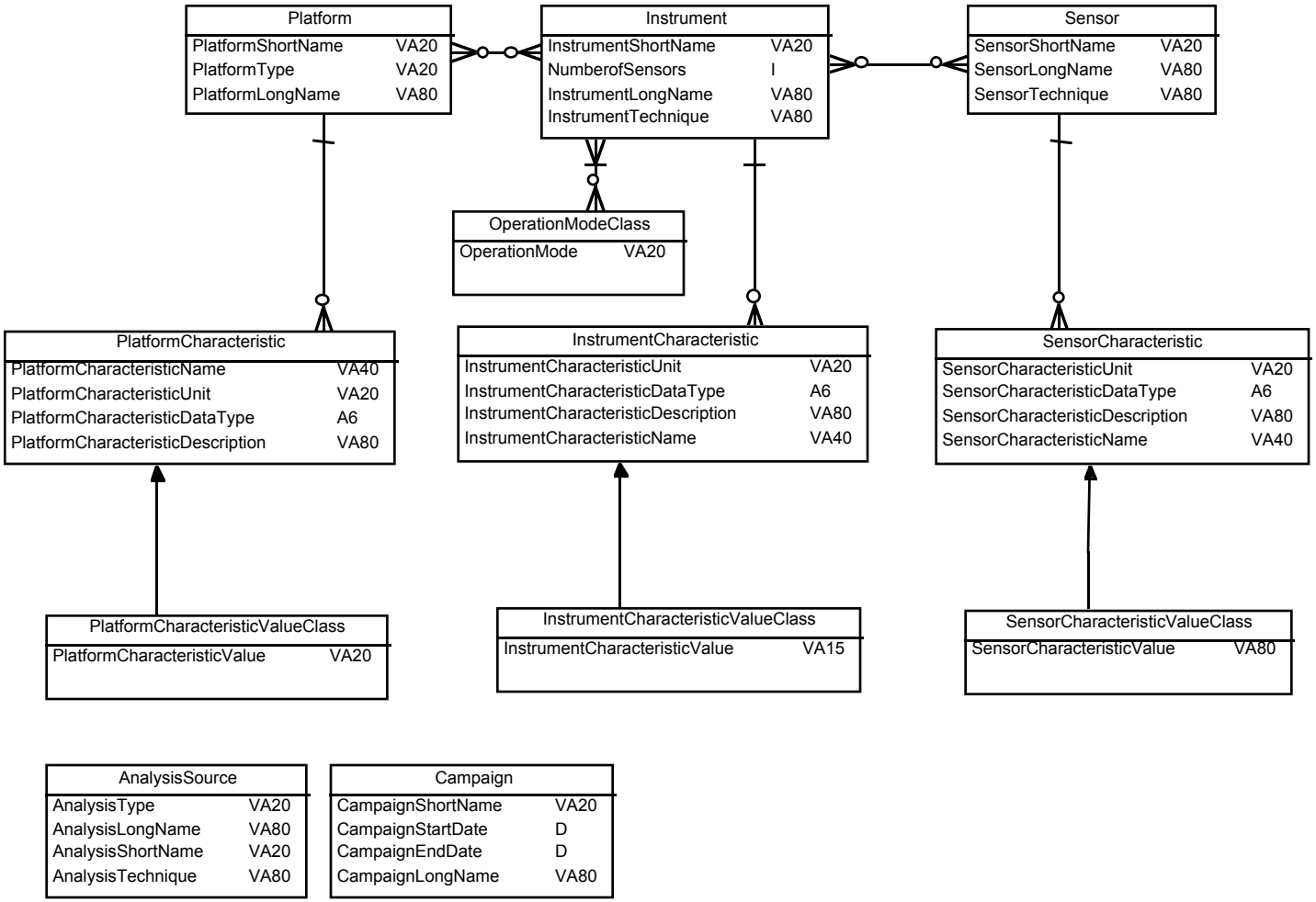


Figure 2-3. DataOriginator

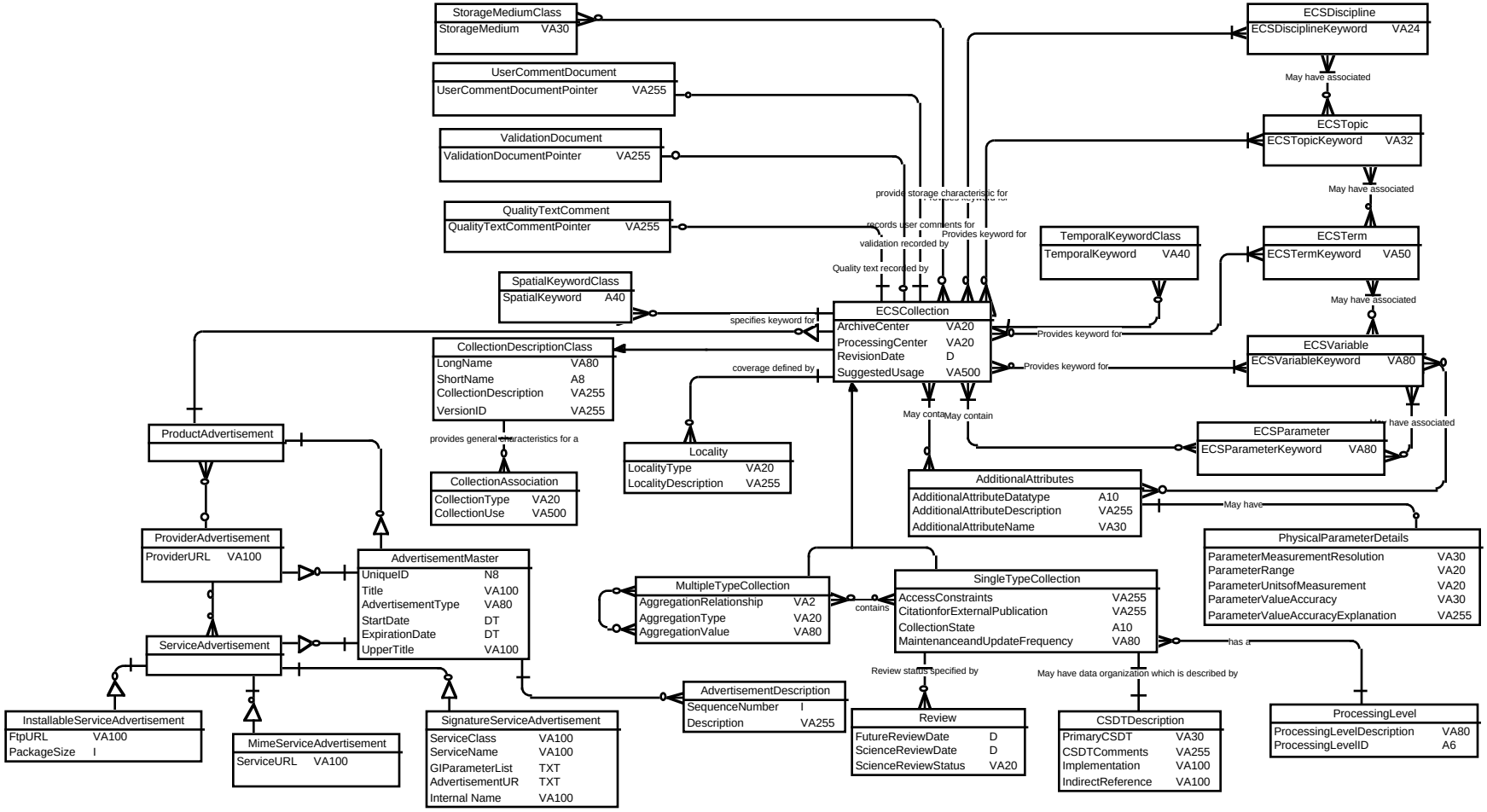


Figure 2-4. ECSCollection

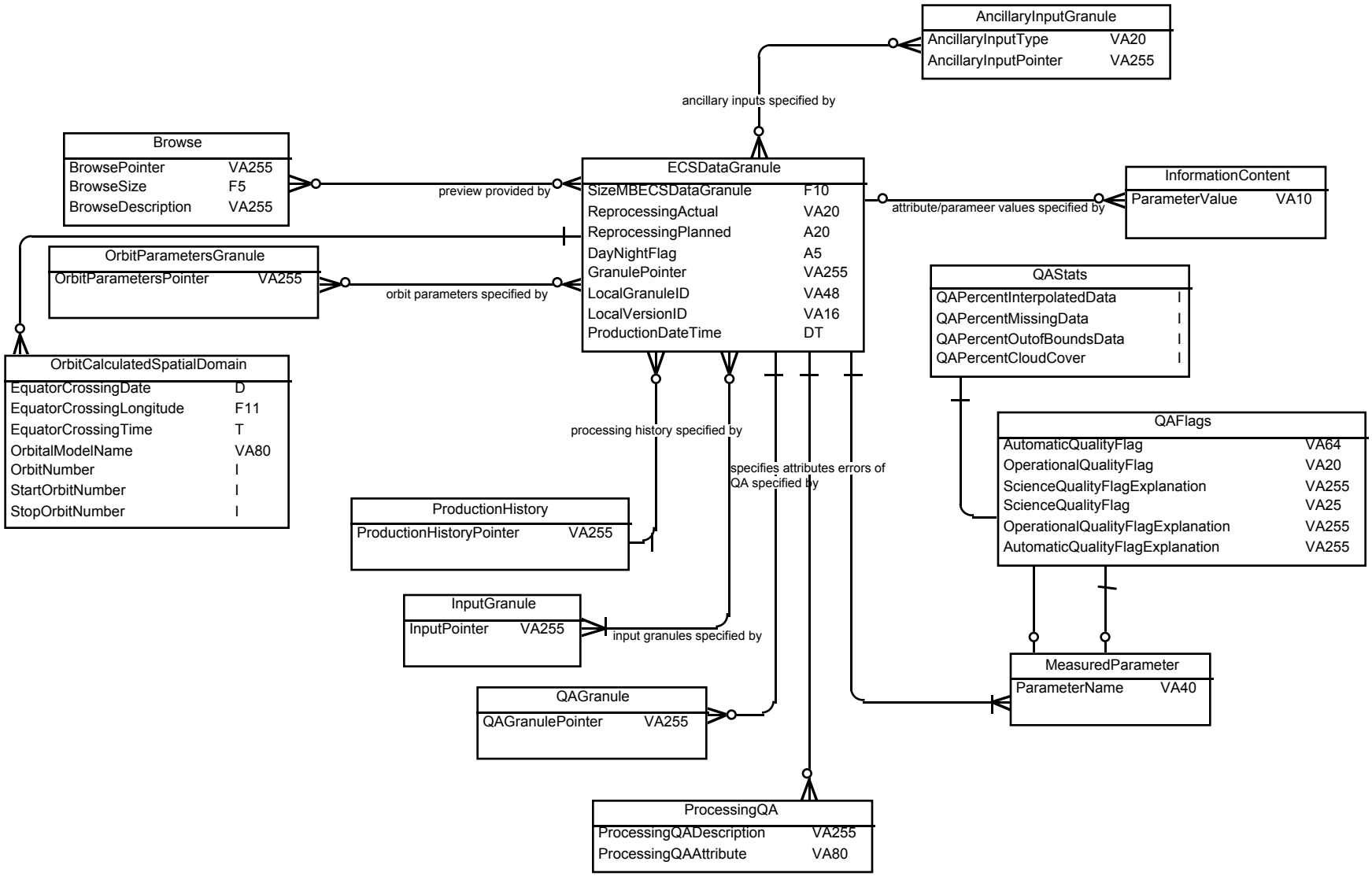


Figure 2-5. ECSDataGranule

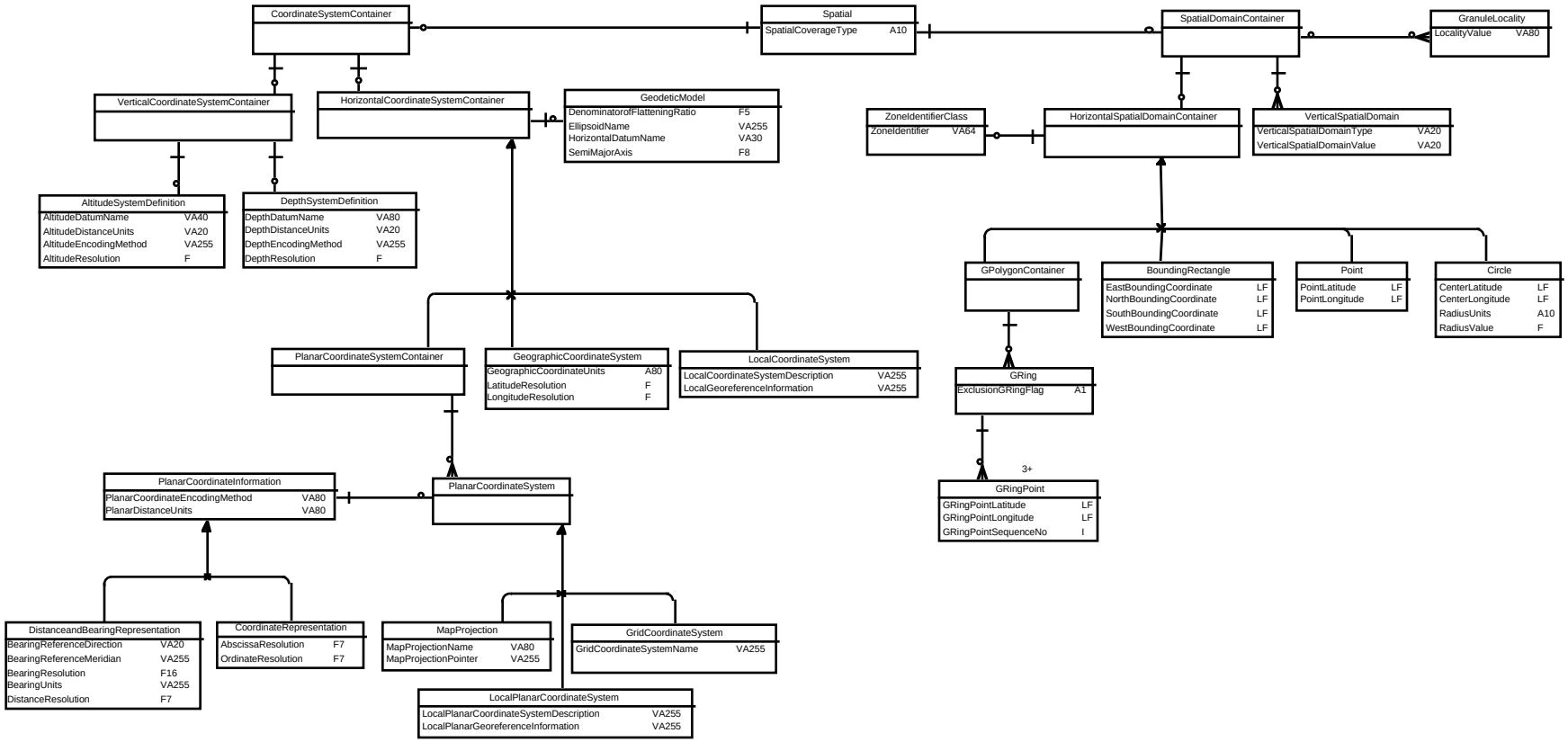


Figure 2-6. Locality Spatial

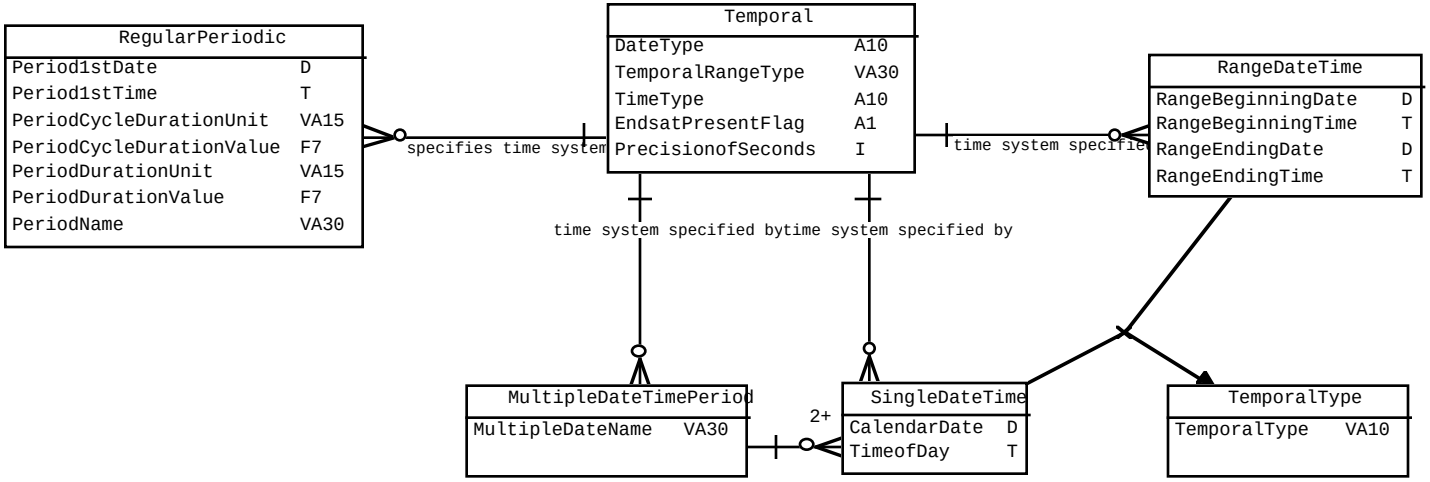


Figure 2-7. LocalityTemporal

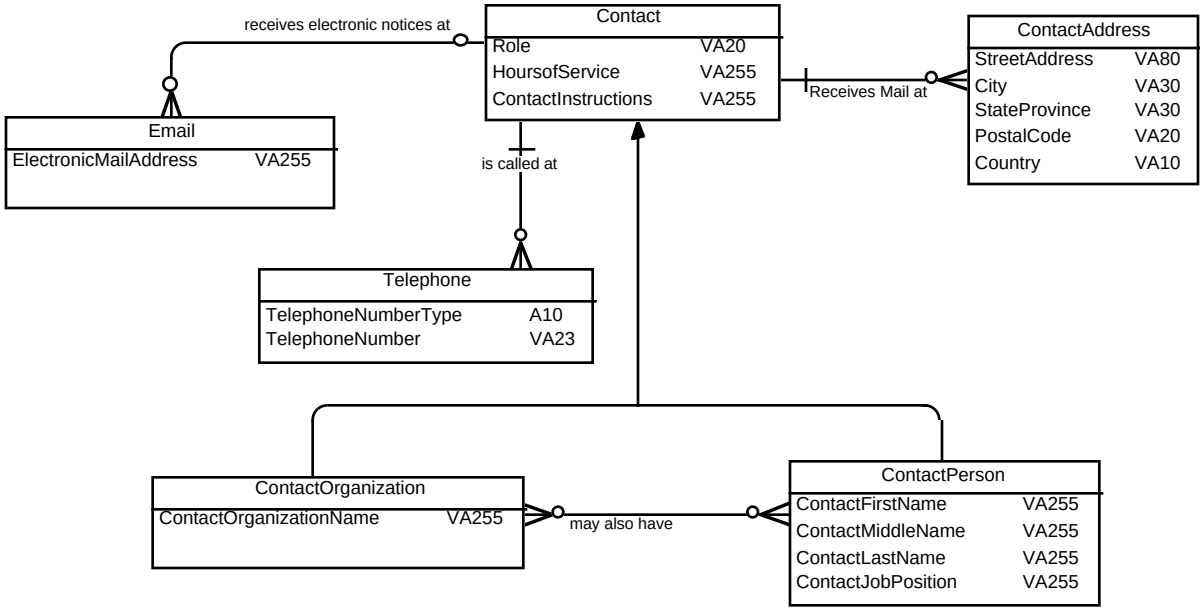


Figure 2-8. Contact

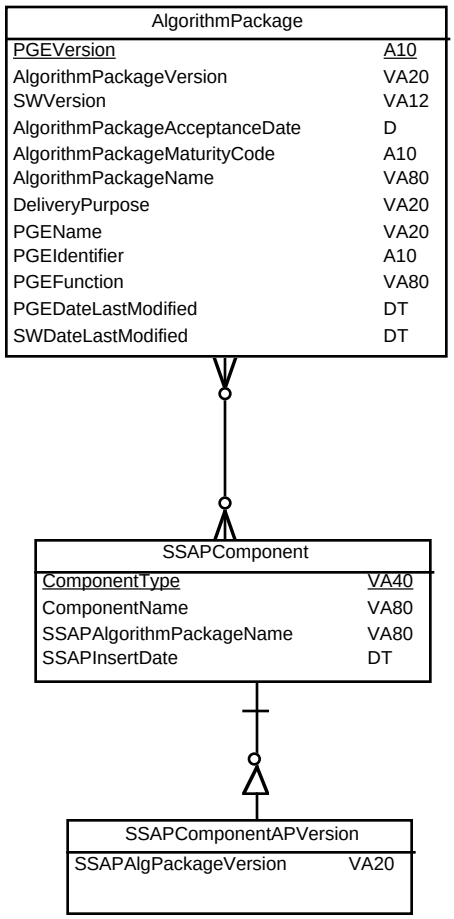


Figure 2-9. DeliveredAlgorithmPackage

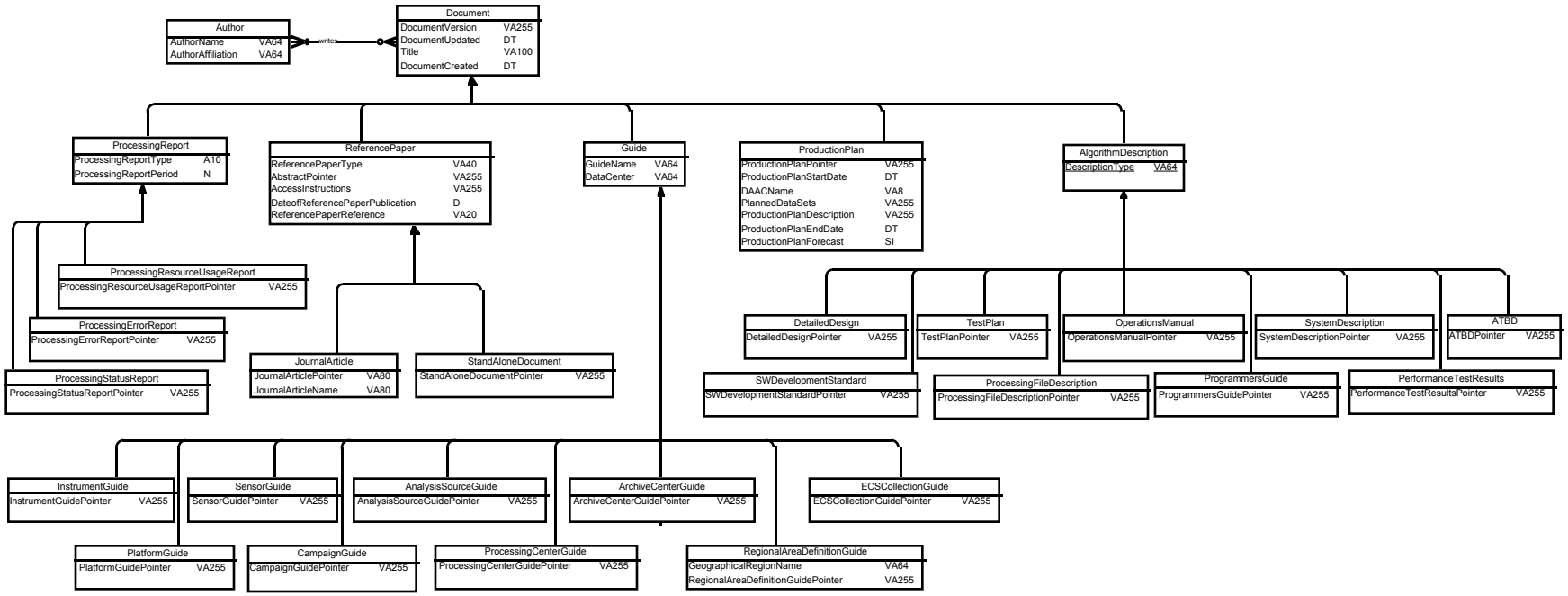


Figure 2-10. Document

2.1.1 Class Definitions

The table below provides a reference list of all classes in the Data Model. Following this table are the class descriptions and list of attributes pertaining to that class.

Table 2-1. Class Reference Table

Class	Class	Class
1 AdditionalAttributes	41 GranuleLocality	81 ProcessingStatusReport
2 AdvertisementDescription	42 GridCoordinateSystem	82 ProductAdvertisement
3 AdvertisementMaster	43 GRing	83 ProductionHistory
4 AlgorithmDescription	44 GRingPoint	84 ProductionPlan
5 AlgorithmPackage	45 Guide	85 ProgrammersGuide
6 AltitudeSystemDefinition	46 InformationContent	86 ProviderAdvertisement
7 AnalysisSource	47 InputGranule	87 QAFlags
8 AnalysisSourceGuide	48 InstallableServiceAdvertisement	88 QAGranule
9 AncillaryInputGranule	49 Instrument	89 QAStats
10 ArchiveCenterGuide	50 InstrumentCharacteristic	90 QualityTextComment
11 ATBD	51 InstrumentCharacteristicValueClass	91 RangeDateTime
12 Author	52 InstrumentGuide	92 ReferencePaper
13 BoundingRectangle	53 JournalArticle	93 RegionalAreaDefinitionGuide
14 Browse	54 LocalCoordinateSystem	94 RegularPeriodic
15 Campaign	55 Locality	95 Review
16 CampaignGuide	56 LocalPlanarCoordinateSystem	96 Sensor
17 Circle	57 MapProjection	97 SensorCharacteristic
18 CollectionAssociation	58 MeasuredParameter	98 SensorCharacteristicValueClass
19 CollectionDescriptionClass	59 MimeServiceAdvertisement	99 SensorGuide
20 Contact	60 MultipleDateTimePeriod	100 ServiceAdvertisement
21 ContactAddress	61 MultipleTypeCollection	101 SignatureServiceAdvertisement
22 ContactOrganization	62 OperationModeClass	102 SingleDateTime
23 ContactPerson	63 OperationsManual	103 SingleTypeCollection
24 CoordinateRepresentation	64 OrbitCalculatedSpatialDomain	104 Spatial
25 CSDTDescription	65 OrbitParametersGranule	105 SpatialKeywordClass
26 DepthSystemDefinition	66 PerformanceTestResults	106 SSAPComponent
27 DetailedDesign	67 PhysicalParameterDetails	107 SSAPComponentAPVersion
28 DistanceandBearingRepresentation	68 PlanarCoordinateInformation	108 StandAloneDocument
29 Document	69 Platform	109 StorageMediumClass
30 ECSCollection	70 PlatformCharacteristic	110 SWDevelopmentStandard
31 ECSCollectionGuide	71 PlatformCharacteristicValueClass	111 SystemDescription
32 ECSDataGranule	72 PlatformGuide	112 Telephone
33 ECSDiscipline	73 Point	113 Temporal
34 ECSParameter	74 ProcessingCenterGuide	114 TemporalKeywordClass
35 ECSTerm	75 ProcessingErrorReport	115 TemporalType
36 ECSTopic	76 ProcessingFileDescription	116 TestPlan
37 ECSVariable	77 ProcessingLevel	117 UserCommentDocument
38 Email	78 ProcessingQA	118 ValidationDocument
39 GeodeticModel	79 ProcessingReport	119 VerticalSpatialDomain
40 GeographicCoordinateSystem	80 ProcessingResourceUsageReport	120 ZoneIdentifierClass

AdditionalAttributes

This class identifies the product specific attributes (i.e. attributes used to describe the unique characteristics of the collection which extend beyond those defined in this model). The 'values' of attributes defined using this mechanism are contained in the class InformationContent.

Attribute(s)

AdditionalAttributeDatatype
AdditionalAttributeDescription
AdditionalAttributeName

AdvertisementDescription

This class provides a description of the Advertisement.

Attribute(s)

SequenceNumber
Description

AdvertisementMaster

Master for all kinds of Advertisements (product, provider and service).

Attribute(s)

UniqueID
Title
AdvertisementType
StartDate
ExpirationDate
UpperTitle

AlgorithmDescription

A class providing parameter components for search of the documents and software associated with the SSAP.

Attribute(s)

DescriptionType

AlgorithmPackage

This class provides the common characteristics of the algorithms used in product generation. These characteristics include the algorithm package name, date, version, maturity code and generating system characteristics for the package.

Attribute(s)

PGEVersion
AlgorithmPackageVersion
SWVersion
AlgorithmPackageAcceptanceDate
AlgorithmPackageMaturityCode
AlgorithmPackageName
DeliveryPurpose
PGEName
PGEIdentifier
PGEFunction

PGEDateLastModified
SWDateLastModified

AltitudeSystemDefinition

The reference frame or system from which altitudes (elevations) are measured. The term 'altitude' is used instead of the common term 'elevation' to conform to the terminology in Federal Information Processing Standards 70-1 and 173. The class contains the datum name, distance units and encoding method which provide the definition for the system.

Attribute(s)

AltitudeDatumName
AltitudeDistanceUnits
AltitudeEncodingMethod
AltitudeResolution

AnalysisSource

This class is used to describe the data acquisition or data processing processes which characterize a collection. Collections can have both data acquisition and data processing processes associated with them. An example would be a weather analysis collection which included data collected using the NWS ASOS network (PlatformType=Network, PlatformShortName=ASOS) which was processed using an NMC analysis model (e.g. AnalysisType=Model, AnalysisShortName=RAFS, AnalysisDescription=Regional Area Forecast System, AnalysisTechnique= Regional Optimal Interpolation.).

Attribute(s)

AnalysisType
AnalysisLongName
AnalysisShortName
AnalysisTechnique

AnalysisSourceGuide

This class contains a logical pointer to Analysis Source guides.

Attribute(s)

AnalysisSourceGuidePointer

AncillaryInputGranule

This class contains the logical pointer to the ancillary input used in creation of the granule. Many such objects (i.e., files) may occur per granule.

Attribute(s)

AncillaryInputType
AncillaryInputPointer

ArchiveCenterGuide

This class contains the logical pointer to the archive center guide.

Attribute(s)

ArchiveCenterGuidePointer

ATBD

This class contains the logical pointer for the Algorithm Theoretical Basis Document.

Attribute(s)

ATBDPointer

Author

This class contains the name and affiliation of the author of the document.

Attribute(s)

AuthorName
AuthorAffiliation

BoundingRectangle

This class contains area coverage for ECS collections or granules. This area coverage is expressed by latitude and longitude values in the order western, eastern, northern, and southern - most. For data sets that include a complete band of latitude around the Earth, the west coord = -180.0 and the east= 180.0. Latitude values are -90.0 to +90.0.

Attribute(s)

EastBoundingCoordinate
NorthBoundingCoordinate
SouthBoundingCoordinate
WestBoundingCoordinate

Browse

This class contains the description and size of a Browse product. The logical pointer to the actual Browse product instance is also included in this class. Its association with the collection indicates that it can apply to a collection as a whole while its association with a granule indicates that browse products may also occur one or more per granule.

Attribute(s)

BrowsePointer
BrowseSize
BrowseDescription

Campaign

This class contains attributes describing the scientific endeavor(s) to which the collection is associated. Scientific endeavors include campaigns, projects, interdisciplinary science investigations, missions, field experiments, etc.

Attribute(s)

CampaignShortName
CampaignStartDate
CampaignEndDate
CampaignLongName

CampaignGuide

This class contains a logical pointer to campaign guides.

Attribute(s)

CampaignGuidePointer

Circle

This class identifies the characteristics required to specify the area coverage for a granule or collection as a circle consisting of latitude center, longitude center, radius units, and radius value.

Attribute(s)

CenterLatitude
CenterLongitude
RadiusUnits
RadiusValue

CollectionAssociation

This class is used to describe collections associated with the instance of a collection; i.e., the name and other details of input collections, collections associated (in science data terms) with the instance and/or collections dependent on the collection in some way.

Attribute(s)

CollectionType
CollectionUse

CollectionDescriptionClass

This class contains a brief description of all collections, also includes the short and long names and the version of the collection.

Attribute(s)

LongName
ShortName
CollectionDescription
VersionID

Contact

This class describes the basic characteristics for a person or an organization type of contact. These contacts may provide information about a Collection, Delivered Algorithm Package, PGE or Data Originator. The role attribute specifies the type of contact and serves to differentiate the use of the module for the various classes associated with it from other modules. System and user profile contact information is held elsewhere.

Attribute(s)

Role
HoursofService
ContactInstructions

ContactAddress

This class contains the address details for each contact.

Attribute(s)

StreetAddress
City
StateProvince
PostalCode
Country

ContactOrganization

This class contains the name of the contact organization. This class is used optionally with ContactPerson. In some instances, ContactOrganization is the primary point of contact.

Attribute(s)

ContactOrganizationName

ContactPerson

This class contains the contact person's name and position. This class is used optionally with ContactOrganization. In some instances, ContactPerson is the primary point of contact.

Attribute(s)

ContactFirstName
ContactMiddleName
ContactLastName
ContactJobPosition

CoordinateRepresentation

This class contains the abscissa and ordinate resolutions for the planar coordinates.

Attribute(s)

AbscissaResolution
OrdinateResolution

CSDTDescription

The class exists to provide a description of the data organization of the product (i.e. a generalized granule description in terms of internal structure). There are many possible structures. All should be describable by one of the PrimaryCSDTs (fixed domain), but the specific Implementation has an unbounded domain indicating the range at the lower structured level. While many CSDTs may exist in a granule, only the primary or dominant CSDT is described (e.g. PrimaryCSDT = swath, Implementation = HDF-EOS). The indirect reference is used for collection specific data organization labels. A comment field is provided for further explanation.

Attribute(s)

PrimaryCSDT
CSDTComments
Implementation
IndirectReference

DepthSystemDefinition

This class contains the characteristics of the reference frame or system from which depths are measured.

Attribute(s)

DepthDatumName
DepthDistanceUnits
DepthEncodingMethod
DepthResolution

DetailedDesign

This class contains the logical pointer to detailed design and/or implementation documents.

Attribute(s)

DetailedDesignPointer

DistanceandBearingRepresentation

This class contains the resolutions units, direction, and meridian for the planar coordinate system. A method of encoding the position of a point by measuring its distance and direction (azimuth angle) from another point.

Attribute(s)

BearingReferenceDirection
BearingReferenceMeridian
BearingResolution
BearingUnits
DistanceResolution

Document

The document class contains common attributes used to specify the title, version, created and update dates for all document types.

Attribute(s)

DocumentVersion
DocumentUpdated
Title
DocumentCreated

ECSCollection

This class provides further description of the collection to include media, scriptive classes and modules.

Attribute(s)

ArchiveCenter
ProcessingCenter
RevisionDate
SuggestedUsage

ECSCollectionGuide

This class contains a logical pointer to collection guides.

Attribute(s)

ECSCollectionGuidePointer

ECSDataGranule

This class provides the descriptive characteristics associated with a granule.

Attribute(s)

SizeMBECSDataGranule
ReprocessingActual
ReprocessingPlanned
DayNightFlag
GranulePointer
LocalGranuleID
LocalVersionID
ProductionDateTime

ECSDiscipline

This class provides the discipline keyword(s) associated with a collection.

Attribute(s)

ECSDisciplineKeyword

ECSParameter

This class contains keywords, associated with the collection, that provide a more specific description than provided by the class ECSVariable.

Attribute(s)

ECSParameterKeyword

ECSTerm

This class contains the term keyword(s) associated with the collection. (i.e., atmospheric temperature, precipitation, soils, sea ice).

Attribute(s)

ECSTermKeyword

ECSTopic

This class contains the topic keyword(s) associated with the collection.(i.e., atmospheric science, hydrosphere, land surface, ocean science).

Attribute(s)

ECSTopicKeyword

ECSVariable

This class contains the variable keyword(s) associated with the collection. (i.e., upper troposphere temperature, precipitable water, soil depth, albedo).

Attribute(s)

ECSVariableKeyword

Email

This class contains the electronic mail address of the contact or document author.

Attribute(s)

ElectronicMailAddress

GeodeticModel

This class contains the parameters describing the shape of the Earth.

Attribute(s)

DenominatorofFlatteningRatio
EllipsoidName
HorizontalDatumName
SemiMajorAxis

GeographicCoordinateSystem

This class contains the latitude and longitude resolution and coordinate units which define the position of a point on the Earth's surface with respect to a reference spheroid.

Attribute(s)

GeographicCoordinateUnits
LatitudeResolution
LongitudeResolution

GranuleLocality

This class contains the value for the granules locality.

Attribute(s)

LocalityValue

GridCoordinateSystem

This class contains the name of the grid coordinate system.

Attribute(s)

GridCoordinateSystemName

GRing

This class contains the G-Ring attribute for the exclusion ring flag which is added to each polygon definition to describe whether the polygon is an 'inner' or 'outer' ring of coverage. Outer rings describe the full coverage extent, while inner rings denote areas of missing coverage within the outer ring.

Attribute(s)

ExclusionGRingFlag

GRingPoint

This class contains the G-Ring attributes which denote the latitude and longitude of the start point of each of a set of geolocation segments, which when combined form a polygon. The sequence numbers determine how to connect the starting points to form the polygon. Each set of values must contain exactly two sets of point values (one for latitude and one for longitude) and a sequence number.

Attribute(s)

GRingPointLatitude
GRingPointLongitude
GRingPointSequenceNo

Guide

This class contains the name and data center location of the Guide. This class provides these basic attributes for all guides.

Attribute(s)

GuideName
DataCenter

InformationContent

This class captures the actual values associated with the Additional Attribute class. This is an abstract class since the datatype varies depending on the value of AdditionalAttributeDatatype.

Attribute(s)

ParameterValue

InputGranule

This class contains the logical pointer to the input granule.

Attribute(s)

InputPointer

InstallableServiceAdvertisement

This class contains the information required to install software related to an installable service.

Attribute(s)

FtpURL
PackageSize

Instrument

This class defines the device used to measure or record data, including direct human observation. Included in this class are defined EOS Instruments. In cases where instruments have a single sensor or the instrument and sensor are used sysnonomously (e.g. AVHRR) the both Instrument and sensor should be recorded.

Attribute(s)

InstrumentShortName
NumberofSensors
InstrumentLongName
InstrumentTechnique

InstrumentCharacteristic

This class is used to define the characteristics of instrument specific attributes. It should not be used to define attributes of new objects.

Attribute(s)

InstrumentCharacteristicUnit
InstrumentCharacteristicDataType
InstrumentCharacteristicDescription
InstrumentCharacteristicName

InstrumentCharacteristicValueClass

This abstract class is intended to capture the value of the attribute defined using the attributes in the class Instrument-Characteristics. Instrument specific attribues defined in this way may vary by datatype but must be single values.

Attribute(s)

InstrumentCharacteristicValue

InstrumentGuide

The class contains a logical pointer to instrument guides.

Attribute(s)

InstrumentGuidePointer

JournalArticle

This class contains the Journal Article name and logical pointer to the article.

Attribute(s)

JournalArticlePointer
JournalArticleName

LocalCoordinateSystem

This class contains a description of the coordinate system and georeference information.

Attribute(s)

LocalCoordinateSystemDescription
LocalGeoreferenceInformation

Locality

This class is used at the collection level to describe the labelling of granules with compounded time/space text values and which are subsequently used to define more phenomenologically-based collections, thus the locality type and description are contained in this class.

Attribute(s)

LocalityType
LocalityDescription

LocalPlanarCoordinateSystem

This class contains a description of the system and georeference information.

Attribute(s)

LocalPlanarCoordinateSystemDescription
LocalPlanarGeoreferenceInformation

MapProjection

This class contains the name of the map projection [the systematic representation of all or part of the surface of the Earth on a plane or developable surface], and a logical pointer to the map projection details which are specified separately. ECS currently supports a number of projections which are specified separately.

Attribute(s)

MapProjectionName
MapProjectionPointer

MeasuredParameter

This class contains the name of the geophysical parameter expressed in the data.

Attribute(s)

ParameterName

MimeServiceAdvertisement

Readable service through web.

Attribute(s)
ServiceURL

MultipleDateTimePeriod

This class contains the name of the multiple date period. Multiple version of SingleDateTime, generally used at the collection level.

Attribute(s)
MultipleDateName

MultipleTypeCollection

This class contains the value, relationship and type for the multiple type collection. This class is used only when the collection has been developed by aggregating single type or other multiple type collections and/or granules using criteria which is recorded using the aggregation attributes.

Attribute(s)
AggregationRelationship
AggregationType
AggregationValue

OperationModeClass

This class identifies the instrument's operational modes associated with the channel, wavelength, and FOV (e.g., launch, survival, initialization, safe, diagnostic, standby, crosstrack, biaxial, solar calibration).

Attribute(s)
OperationMode

OperationsManual

This class contains a logical pointer to the operations manual.

Attribute(s)
OperationsManualPointer

OrbitCalculatedSpatialDomain

Attribute(s)
EquatorCrossingDate
EquatorCrossingLongitude
EquatorCrossingTime
OrbitalModelName
OrbitNumber
StartOrbitNumber
StopOrbitNumber

OrbitParametersGranule

This class contains the logical pointer to the orbit parameter granule. This class contains orbit data for which an association with the granule database exists.

Attribute(s)

OrbitParametersPointer

PerformanceTestResults

This class contains a logical pointer to the performance test results.

Attribute(s)

PerformanceTestResultsPointer

PhysicalParameterDetails

This class is used to provide further information about the physical or geophysical parameters specified in the AdditionalAttributes and ECSParameters. It contains the units of measurement, range, accuracy, explanation and resolution.

Attribute(s)

ParameterMeasurementResolution
ParameterRange
ParameterUnitsofMeasurement
ParameterValueAccuracy
ParameterValueAccuracyExplanation

PlanarCoordinateInformation

This class contains information about the coordinate system developed on the planar surface to include the distance units and encoding method.

Attribute(s)

PlanarCoordinateEncodingMethod
PlanarDistanceUnits

Platform

This class describes the relevant platforms associated with the acquisition of the collection or granule. Platform types include Spacecraft, Aircraft, Vessel, Buoy, Platform, Station, Network or Human. In cases where Human is the platform type it should be of scientific relevancy to the collection. If an instrument is hand held and that is relevant to the collection of the data then PlatformType=Human. In cases where an instrument is hand-held but the human is associated with another platform then all relevant platforms should be associated with the collection. Humans can be both Platforms and Instruments (e.g. if a human is standing on the ground and makes a visual observation then: PlatformType=Human, Instrument=HumanObservation, SensorShortName=HumanVisual).

Attribute(s)

PlatformShortName
PlatformType
PlatformLongName

PlatformCharacteristic

This class is used to define the characteristics of platform specific attributes. It should not be used to define attributes of new objects.

Attribute(s)

PlatformCharacteristicName
PlatformCharacteristicUnit
PlatformCharacteristicDataType
PlatformCharacteristicDescription

PlatformCharacteristicValueClass

This abstract class is intended to capture the value of the attribute defined using the attributes in the class Platform-Characteristics. Platform specific attributes defined in this way may vary by datatype but must be single values.

Attribute(s)

PlatformCharacteristicValue

PlatformGuide

This class contains a logical pointer to platform guides.

Attribute(s)

PlatformGuidePointer

Point

This class identifies the characteristics of the point area coverage to include the latitude and longitude.

Attribute(s)

PointLatitude
PointLongitude

ProcessingCenterGuide

This class contains a logical pointer to processing center guides.

Attribute(s)

ProcessingCenterGuidePointer

ProcessingErrorReport

This class contains a logical pointer to the processing error report which is produced by the ECS Planning Subsystem.

Attribute(s)

ProcessingErrorReportPointer

ProcessingFileDescription

This class contains a logical pointer to the processing file description which details the file and record layouts for each PGE.

Attribute(s)

ProcessingFileDescriptionPointer

ProcessingLevel

The processing level class contains the level identifier and level description of the collection.

Attribute(s)

ProcessingLevelDescription
ProcessingLevelID

ProcessingQA

This class contains the name of the attribute in error in addition to a brief description of the error that occurred during processing.

Attribute(s)

ProcessingQADescription
ProcessingQAAttribute

ProcessingReport

This class contains the type and period of the processing report which is produced by the ECS Planning Subsystem.

Attribute(s)

ProcessingReportType
ProcessingReportPeriod

ProcessingResourceUsageReport

This class contains the logical pointer to the processing resource usage report.

Attribute(s)

ProcessingResourceUsageReportPointer

ProcessingStatusReport

This class contains a logical pointer to the processing status report produced by the ECS Planning Subsystem.

Attribute(s)

ProcessingStatusReportPointer

ProductAdvertisement

Advertisement about the data in ECS or non-ECS data.

Attribute(s)

ProductionHistory

This class contains a logical pointer to the processing history which production information about the production of each granule associated with the granule database. This includes the input products and granules used to generate the product.

Attribute(s)

ProductionHistoryPointer

ProductionPlan

This class contains the dates, forecast, description, and planned data sets associated with the production plan in addition to the logical pointer to the production plan. This class has searchable attributes plus a pointer to a specification for the plans produced by the ECS Planning Subsystem.

Attribute(s)

ProductionPlanPointer
ProductionPlanStartDate
DAACName
PlannedDataSets
ProductionPlanDescription
ProductionPlanEndDate
ProductionPlanForecast

ProgrammersGuide

This class contains the logical pointer to the programmers guide.

Attribute(s)

ProgrammersGuidePointer

ProviderAdvertisement

This class describes the person or organization that provides the Advertisment. This class must be populated if ServiceAdvertisement or ProductAdvertisement are populated.

Attribute(s)

ProviderURL

QAFlags

This class contains the science, operational and automatic quality flags which indicate the overall quality assurance levels of specific parameter values within a granule.

Attribute(s)

AutomaticQualityFlag
OperationalQualityFlag
ScienceQualityFlagExplanation
ScienceQualityFlag

OperationalQualityFlagExplanation
AutomaticQualityFlagExplanation

QAGranule

This class specifies the logical pointer to the QA granule. This class contains material for a separate file or files containing user specified QA information about the granule.

Attribute(s)

QAGranulePointer

QAStats

This class contains measures of quality for the granule. The parameters used to set these measures are not preset and will be determined by the data producer. Each set of measures can occur many times either for the granule as a whole or for individual parameters.

Attribute(s)

QAPercentInterpolatedData
QAPercentMissingData
QAPercentOutofBoundsData
QAPercentCloudCover

QualityTextComment

A class containing a logical pointer to documents which record details of quality measurement and other comments concerning the collection.

Attribute(s)

QualityTextCommentPointer

RangeDateTime

This class specifies the start and end date/time of a granule or collection.

Attribute(s)

RangeBeginningDate
RangeBeginningTime
RangeEndingDate
RangeEndingTime

ReferencePaper

The reference paper class defines the common properties of the underlying reference material, and inherits further attributes from the Document Class.

Attribute(s)

ReferencePaperType
AbstractPointer
AccessInstructions
DateofReferencePaperPublication
ReferencePaperReference

RegionalAreaDefinitionGuide

This class contains the geographic region name and the logical pointer to the regional area definition guides.

Attribute(s)

GeographicalRegionName
RegionalAreaDefinitionGuidePointer

RegularPeriodic

This class contains the name of the temporal period in addition to the date, time, duration unit, and value, and cycle duration unit and value. Used at the collection level to describe a collection having granules which cover a regularly occuring period.

Attribute(s)

Period1stDate
Period1stTime
PeriodCycleDurationUnit
PeriodCycleDurationValue
PeriodDurationUnit
PeriodDurationValue
PeriodName

Review

This class provides for dates and status as applicable for collections which are active.

Attribute(s)

FutureReviewDate
ScienceReviewDate
ScienceReviewStatus

Sensor

This class is used to describe sensory subcomponents of an instrument. In cases where instruments have a single sensor or the Instrument and Sensor are used synonomously (e.g. AVHRR) both the Instrument and Sensor should be recorded.

Attribute(s)

SensorShortName
SensorLongName
SensorTechnique

SensorCharacteristic

This class is used to define the characteristics of sensor specific attributes. It should not be used to define attributes of new objects.

Attribute(s)

SensorCharacteristicUnit
SensorCharacteristicDataType

SensorCharacteristicDescription
SensorCharacteristicName

SensorCharacteristicValueClass

This abstract class is intended to capture the value of the attribute defined using the attributes in the class SensorCharacteristics. Sensor specific attributes defined in this way may vary by datatype but must be single values.

Attribute(s)

SensorCharacteristicValue

SensorGuide

This class contains a logical pointer to the sensor guides.

Attribute(s)

SensorGuidePointer

ServiceAdvertisement

Description of software typically accessing data found in ProductAdvertisement.

Attribute(s)

SignatureServiceAdvertisement

This class contains information that describe services which are executed using an argument list.

Attribute(s)

ServiceClass
ServiceName
GIParameterList
AdvertisementUR
Internal Name

SingleDateTime

This class contains the time of day and calendar date for an ECS granule. This class provides a means of encoding a single date and time for a granule occuring at that time or during the period covered by the time (e.g. one day for a single date excluding the time within the day).

Attribute(s)

CalendarDate
TimeofDay

SingleTypeCollection

This class provides a description specific to a single, as opposed to a multitype collection, to include citation of external publication, collection state, maintenance and update frequency, and access constraints. The definition of a singletype collection is stated below. The management and development of singletype collections is the subject of other documentation.

A single type collection contains a set of granules for which the dominant variation in the value of metadata attributes is in the space and time attributes.

For example, most level 0, 1, and many level 2 collections conform to this definition.

Attribute(s)

AccessConstraints
CitationforExternalPublication
CollectionState
MaintenanceandUpdateFrequency

Spatial

Largely a container class, but carrying an attribute indicating the general type of coverage.

Attribute(s)

SpatialCoverageType

SpatialKeywordClass

This class contains the spatial keywords associated with the ECS collection.

Attribute(s)

SpatialKeyword

SSAPComponent

Defines a piece of an SSAP (Science Software Algorithm Package).

Attribute(s)

ComponentType
ComponentName
SSAPAlgorithmPackageName
SSAPInsertDate

SSAPComponentAPVersion

Defines the versions (of the Algorithm Package) associated with a software component.

Attribute(s)

SSAPAlgPackageVerion

StandAloneDocument

This class contains the logical pointer to the stand alone document which is a document not published in journals.

Attribute(s)

StandAloneDocumentPointer

StorageMediumClass

This class contains the medium on which the data are stored.

Attribute(s)
StorageMedium

SWDevelopmentStandard

This class contains a logical pointer to the software development standard. Separate document.

Attribute(s)
SWDevelopmentStandardPointer

SystemDescription

Separately specified, description of science software processing system.

Attribute(s)
SystemDescriptionPointer

Telephone

This class contains the telephone details associated with the contact.

Attribute(s)
TelephoneNumberType
TelephoneNumber

Temporal

This class contains attributes which describe the basis of the time system used in other classes.

Attribute(s)
DateType
TemporalRangeType
TimeType
EndsatPresentFlag
PrecisionofSeconds

TemporalKeywordClass

This class identifies the type of temporal characterization for a granule or collection.

Attribute(s)
TemporalKeyword

TemporalType

This class identifies the type of temporal characterization for a granule or collection.

Attribute(s)
TemporalType

TestPlan

This class contains the logical pointer to the test plan for the PGE.

Attribute(s)
TestPlanPointer

UserCommentDocument

A class containing a logical pointer to documents used to record user comments on the collection.

Attribute(s)
UserCommentDocumentPointer

ValidationDocument

A class containing a logical pointer to a document used to record details of validation steps used for the assessment of granule and overall collection quality.

Attribute(s)
ValidationDocumentPointer

VerticalSpatialDomain

This class contains the domain value and type for the vertical spatial domain.

Attribute(s)
VerticalSpatialDomainType
VerticalSpatialDomainValue

ZoneIdentifierClass

This class contains the zone identifier of the various zones in the associated grid coordinate system. See domain values of coordinate system for constraints on the zone numbers.

Attribute(s)
ZoneIdentifier

2.2 Earth Science Metadata Specifications

Descriptions of the attribute specifications found within the S-Designor tool are presented in the following section. Each attribute will contain all relevant information for that attribute.

Table 2-2 provides an attribute reference list with appropriate datatypes.

Table 2-2. Attribute Reference Table (1 of 3)

Attribute	DataType	Attribute	DataType
1 AbscissaResolution	F7	52 CollectionDescription	VA255
2 AbstractPointer	VA255	53 CollectionState	A10
3 AccessConstraints	VA255	54 CollectionType	VA20
4 AccessInstructions	VA255	55 CollectionUse	VA500
5 AdditionalAttributeDatatype	A10	56 ComponentName	VA80
6 AdditionalAttributeDescription	VA255	57 ComponentType	VA40
7 AdditionalAttributeName	VA40	58 ContactFirstName	VA255
8 AdvertisementType	VA80	59 ContactInstructions	VA255
9 AdvertisementUR	VA255	60 ContactJobPosition	VA255
10 AggregationRelationship	VA2	61 ContactLastName	VA255
11 AggregationType	VA20	62 ContactMiddleName	VA255
12 AggregationValue	VA80	63 ContactOrganizationName	VA255
13 AlgorithmPackageAcceptanceDate	D	64 Country	VA10
14 AlgorithmPackageMaturityCode	A10	65 CSDTComments	VA255
15 AlgorithmPackageName	VA80	66 DAACName	VA8
16 AlgorithmPackageVersion	VA20	67 DataCenter	VA64
17 AltitudeDatumName	VA40	68 DateofReferencePaperPublication	D
18 AltitudeDistanceUnits	VA20	69 DateType	A10
19 AltitudeEncodingMethod	VA255	70 DayNightFlag	A5
20 AltitudeResolution	F	71 DeliveryPurpose	VA20
21 AnalysisLongName	VA80	72 DenominatorofFlatteningRatio	F5
22 AnalysisShortName	VA20	73 DepthDatumName	VA80
23 AnalysisSourceGuidePointer	VA255	74 DepthDistanceUnits	VA20
24 AnalysisTechnique	VA80	75 DepthEncodingMethod	VA255
25 AnalysisType	VA20	76 DepthResolution	F
26 AncillaryInputPointer	VA255	77 Description	VA255
27 AncillaryInputType	VA20	78 DescriptionType	VA64
28 ArchiveCenter	VA20	79 DetailedDesignPointer	VA255
29 ArchiveCenterGuidePointer	VA255	80 DistanceResolution	F7
30 ATBDPointer	VA255	81 DocumentCreated	DT
31 AuthorAffiliation	VA64	82 DocumentUpdated	DT
32 AuthorName	VA64	83 DocumentVersion	VA255
33 AutomaticQualityFlag	VA64	84 EastBoundingCoordinate	LF
34 AutomaticQualityFlagExplanation	VA255	85 ECSCollectionGuidePointer	VA255
35 BearingReferenceDirection	VA20	86 ECSDisciplineKeyword	VA24
36 BearingReferenceMeridian	VA255	87 ECSParameterKeyword	VA80
37 BearingResolution	F16	88 ECSTermKeyword	VA50
38 BearingUnits	VA255	89 ECSTopicKeyword	VA32
39 BrowseDescription	VA255	90 ECSVariableKeyword	VA80
40 BrowsePointer	VA255	91 ElectronicMailAddress	VA255
41 BrowseSize	F5	92 EllipsoidName	VA255
42 CalendarDate	D	93 EndsatPresentFlag	A1
43 CampaignEndDate	D	94 EquatorCrossingDate	D
44 CampaignGuidePointer	VA255	95 EquatorCrossingLongitude	N11,6
45 CampaignLongName	VA80	96 EquatorCrossingTime	T
46 CampaignShortName	VA20	97 ExclusionGRingFlag	A1
47 CampaignStartDate	D	98 ExpirationDate	DT
48 CenterLatitude	LF	99 FtpURL	VA100
49 CenterLongitude	LF	100 FutureReviewDate	D
50 CitationforExternalPublication	VA255	101 GeographicalRegionName	VA64
51 City	VA30	102 GeographicCoordinateUnits	A80
103 GIParameterList	VA255	154 ParameterMeasurementResolution	VA30
104 GranulePointer	VA255	155 ParameterName	VA40

Table 2-2. Attribute Reference Table (2 of 3)

Attribute	DataType	Attribute	DataType
105GridCoordinateSystemName	VA255	156ParameterRange	VA20
106GRingPointLatitude	LF	157ParameterUnitsofMeasurement	VA20
107GRingPointLongitude	LF	158ParameterValue	VA10
108GRingPointSequenceNo	I	159ParameterValueAccuracy	VA30
109GuideName	VA64	160ParameterValueAccuracyExplanation	VA255
110HorizontalDatumName	VA30	161PerformanceTestResultsPointer	VA255
111HoursofService	VA255	162Period1stDate	D
112Implementation	VA100	163Period1stTime	T
113IndirectReference	VA100	164PeriodCycleDurationUnit	VA15
114InputPointer	VA255	165PeriodCycleDurationValue	F7
115InstrumentCharacteristicDataType	A6	166PeriodDurationUnit	VA15
116InstrumentCharacteristicDescription	VA80	167PeriodDurationValue	F7
117InstrumentCharacteristicName	VA40	168PeriodName	VA30
118InstrumentCharacteristicUnit	VA20	169PGEDateLastModified	DT
119InstrumentCharacteristicValue	VA15	170PGEFunction	VA80
120InstrumentGuidePointer	VA255	171PGEIdentifier	A10
121InstrumentLongName	VA80	172PGEName	VA20
122InstrumentShortName	VA20	173PGEVersion	A10
123InstrumentTechnique	VA80	174PlanarCoordinateEncodingMethod	VA80
124Internal Name	VA100	175PlanarDistanceUnits	VA80
125JournalArticleName	VA80	176PlannedDataSets	VA255
126JournalArticlePointer	VA80	177PlatformCharacteristicDataType	A6
127LatitudeResolution	F	178PlatformCharacteristicDescription	VA80
128LocalCoordinateSystemDescription	VA255	179PlatformCharacteristicName	VA40
129LocalGeoreferenceInformation	VA255	180PlatformCharacteristicUnit	VA20
130LocalGranuleID	VA48	181PlatformCharacteristicValue	VA20
131LocalityDescription	VA255	182PlatformGuidePointer	VA255
132LocalityType	VA20	183PlatformLongName	VA80
133LocalityValue	VA80	184PlatformShortName	VA20
134 LocalPlanarCoordinateSystemDescription	VA255	185PlatformType	VA20
135LocalPlanarGeoreferenceInformation	VA255	186PointLatitude	LF
136LocalVersionID	VA16	187PointLongitude	LF
137LongitudeResolution	F	188PostalCode	VA20
138LongName	VA80	189PrecisionofSeconds	I
139MaintenanceandUpdateFrequency	VA80	190PrimaryCSDT	VA30
140MapProjectionName	VA80	191ProcessingCenter	VA20
141MapProjectionPointer	VA255	192ProcessingCenterGuidePointer	VA255
142MultipleDateName	VA30	193ProcessingErrorReportPointer	VA255
143NorthBoundingCoordinate	LF	194ProcessingFileDescriptionPointer	VA255
144NumberofSensors	I	195ProcessingLevelDescription	VA80
145OperationalQualityFlag	VA20	196ProcessingLevelID	A6
146OperationalQualityFlagExplanation	VA255	197ProcessingQAAttribute	VA80
147OperationMode	VA20	198ProcessingQADescription	VA255
148OperationsManualPointer	VA255	199ProcessingReportPeriod	N
149OrbitalModelName	VA80	200ProcessingReportType	A10
150OrbitNumber	I	201 ProcessingResourceUsageReportPointer	VA255
151OrbitParametersPointer	VA255	202ProcessingStatusReportPointer	VA255
152OrdinateResolution	F7	203ProductionDateTime	DT
153PackageSize	I	204ProductionHistoryPointer	VA255
205ProductionPlanDescription	VA255	246ServiceClass	VA100
206ProductionPlanEndDate	DT	247ServiceName	VA100
207ProductionPlanForecast	SI	248ServiceURL	VA100
208ProductionPlanPointer	VA255	249ShortName	A8

Table 2-2. Attribute Reference Table (3 of 3)

Attribute	DataType	Attribute	DataType
209ProductionPlanStartDate	DT	250SizeMBECSDataGranule	F10
210ProgrammersGuidePointer	VA255	251SouthBoundingCoordinate	LF
211ProviderURL	VA100	252SpatialCoverageType	A10
212QAGranulePointer	VA255	253SpatialKeyword	A40
213QAPercentCloudCover	I	254SSAPAlgorithmPackageName	VA80
214QAPercentInterpolatedData	I	255SSAPAlgPackageVersion	VA20
215QAPercentMissingData	I	256SSAPInsertDate	DT
216QAPercentOutofBoundsData	I	257StandAloneDocumentPointer	VA255
217QualityTextCommentPointer	VA255	258StartDate	DT
218RadiusUnits	A10	259StartOrbitNumber	I
219RadiusValue	F	260StateProvince	VA30
220RangeBeginningDate	D	261StopOrbitNumber	I
221RangeBeginningTime	T	262StorageMedium	VA30
222RangeEndingDate	D	263StreetAddress	VA80
223RangeEndingTime	T	264SuggestedUsage	VA500
224ReferencePaperReference	VA20	265SWDateLastModified	DT
225ReferencePaperType	VA40	266SWDevelopmentStandardPointer	VA255
226RegionalAreaDefinitionGuidePointer	VA255	267SWVersion	VA12
227ReprocessingActual	VA20	268SystemDescriptionPointer	VA255
228ReprocessingPlanned	A20	269TelephoneNumber	VA23
229RevisionDate	D	270TelephoneNumberType	A10
230Role	VA20	271TemporalKeyword	VA40
231ScienceQualityFlag	VA25	272TemporalRangeType	VA30
232ScienceQualityFlagExplanation	VA255	273TemporalType	VA10
233ScienceReviewDate	D	274TestPlanPointer	VA255
234ScienceReviewStatus	VA20	275TimeofDay	T
235SemiMajorAxis	F8	276TimeType	A10
236SensorCharacteristicDataType	A6	277Title	VA100
237SensorCharacteristicDescription	VA80	278UniqueID	N8
238SensorCharacteristicName	VA40	279UpperTitle	VA100
239SensorCharacteristicUnit	VA20	280UserCommentDocumentPointer	VA255
240SensorCharacteristicValue	VA80	281ValidationDocumentPointer	VA255
241SensorGuidePointer	VA255	282VersionID	VA255
242SensorLongName	VA80	283VerticalSpatialDomainType	VA20
243SensorShortName	VA20	284VerticalSpatialDomainValue	VA20
244SensorTechnique	VA80	285WestBoundingCoordinate	LF
245SequenceNumber	I	286ZoneIdentifier	VA64

AbscissaResolution

The (nominal) minimum distance between the 'x' or column values of two adjacent points, expressed in Planar Distance Units of measure. Planar Distance Units of measure are units used for distances whose domain values are meters, international feet, and survey feet.

Content Source: DP
Constraints: Abscissa Resolution > 0.0

Reference Document: 420-TP-015-001, February 1997

Class

CoordinateRepresentation

AbstractPointer

Pointer to the reference paper article abstract.

Content Source: DP
Constraints: if abstract exists (must for all papers), this must exist.

Reference Document: 420-TP-015-001, February 1997

Class

ReferencePaper

AccessConstraints

Restrictions and legal prerequisites for accessing the collection. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the collection.

These restrictions differ from Use Restrictions in that they only apply to access.

Content Source: DP; DAAC

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997

Class

SingleTypeCollection

AccessInstructions

Instructions describing how to obtain electronic access to a stand-alone document. May simply be an anonymous ftp site address, or a World Wide Web homepage URL. Data Provider Sites may establish additional instruction requirements.

Content Source: DP; DAAC
Constraints: if reference papers utilized, this must exist.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997

Class

ReferencePaper

AdditionalAttributeDatatype

Data type of ParameterValue.

Content Source: DP

Domain:

int
string
float
date
time

Reference Document: 420-TP-015-001, February 1997

Class

AdditionalAttributes

AdditionalAttributeDescription

This attribute provides a description for the AdditionalAttributeName.

Content Source: DP
Constraints: If AdditionalAttributeName exists then AdditionalAttributeDescription must exist.

Reference Document: 420-TP-015-001, February 1997

Class

AdditionalAttributes

AdditionalAttributeName

Data type of AdditionalAttributeName.

Content Source: DP
Constraints: If AdditionalAttributeName exists then AdditionalAttributeDatatype must exist.

Reference Document: 420-TP-015-001, February 1997

Class

AdditionalAttributes

AdvertisementType

Type of advertisement (product, provider, or service).

Class

AdvertisementMaster

AdvertisementUR

Universal Reference to the server that can execute a service.

Content Source: IOS

Class

SignatureServiceAdvertisement

AggregationRelationship

This attribute identifies the relationship between the aggregation attribute and its corresponding value. This relationship may be expressed as boolean operations i.e. '=, <, >, n'

Content Source: DP
Constraints: If AggregationType and AggregationValue exist then AggregationRelationship must exist.

Domain:

'=' - Equal
GT - Greater Than
LT - Less Than
NE - Not Equal
GE - Greater Than or Equal
LE - Less Than or Equal

Reference Document: 420-TP-015-001, February 1997

Class

MultipleTypeCollection

AggregationType

This attribute will contain the criteria by which multiple type collections have been grouped. It will describe the major categorization which applies to the data therein. Possible collection groupings include: INSTRUMENT, for all collections associated with a given collecting instrument such as CERES--this is a common aggregation criteria for ECS 'datasets'; PROJECT, for all data associated with a given project that may or may not be related to a single instrument, such as FIRE--this is again a common aggregation criteria for ECS 'datasets'; PARAMETER, for all gran-ules that reflect measurements of a single specific (or related group of specific) geophysical parameters, such as CLOUD PROPERTIES--this is often an aggregation criteria for ECS 'products'; SUPERGRANULE, for collections of granules that a data provider wishes to be orderable as a single related grouping, such as SSM/I TIME SERIES-- this is a concept

adopted from MSFC use; EVENT, for a predetermined/tagged set of granules that have been found to be related to a particular geophysical phenomena or event, such as MIDWEST FLOOD '93 or OZONE HOLE or MT. PINATUBO--this is a new ECS concept, also suggested by the University of Virginia Atmospheric researchers.

Content Source: DP
Constraints: If AggregationValue and AggregationRelationship exist then AggregationType must exist.

Domain:

Instrument
Project
Parameter
Supergranule
Event
Season
Region

Reference Document: 420-TP-015-001, February 1997

Class

MultipleTypeCollection

AggregationValue

This attribute contains the value associated with the aggregation type. An example may be EVENT (aggregation type) = MIDWEST FLOOD '93 (aggregation value). MIDWEST FLOOD '93 would be the value associated with the event or aggregation type.

Content Source: DP
Constraints: If AggregationType and AggregationRelationship exist then AggregationValue must exist.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997

Class

MultipleTypeCollection

AlgorithmPackageAcceptanceDate

This attribute specifies the date that this package version successfully passed AI&T procedures and was accepted as ECS standard algorithm.

Content Source: AI&T
Constraints:
If Delivered Algorithm Package is utilized then AlgorithmPackageAcceptanceDate must exist.

Reference Document: 420-TP-015-001, February 1997

Class

AlgorithmPackage

AlgorithmPackageMaturityCode

This specifies the maturity of the algorithm package as a whole. Maturity code plus version number tells version state.

Content Source: DP
Constraints:
If Delivered Algorithm Package is utilized then AlgorithmPackageMaturityCode must exist.

Domain:

pre-launch - preflight development code
preliminary - EOS platform is flying development code at best; frequently changing, not stable.
operational - production code, will change, but not frequently; preliminary validation has been done.
stable - code stable and has been fully validated.
final - final version of code, mission is over.

Reference Document: 420-TP-015-001, February 1997

Class

AlgorithmPackage

AlgorithmPackageName

This attribute is the name given to the complete delivered package submitted for algorithm integration and test.

Content Source: DP
Constraints:
If Delivered Algorithm Package is utilized then AlgorithmPackageName must exist.

Reference Document: 420-TP-015-001, February 1997

Class

AlgorithmPackage

AlgorithmPackageVersion

This attribute specifies the version of the full package being delivered.

Content Source: DP
Constraints:
If Delivered Algorithm Package is utilized then AlgorithmPackageVersion must exist.

Reference Document: 420-TP-015-001, February 1997

Class

AlgorithmPackage

AltitudeDatumName

The identification given to the level surface taken as the surface of reference from which altitudes are measured.

Content Source: DP

Domain:

National Geodetic Vertical Datum of 1929 (NGVD29)
North American Vertical Datum of 1988 (NGVD88)
Free Text

Reference Document: 420-TP-015-001, February 1997

Class

AltitudeSystemDefinition

AltitudeDistanceUnits

Units in which altitudes are recorded.

Content Source: DP

Domain:

meters
feet
millibars - Used to measure pressure levels
theta value - Units used to measure geopotential height
hectoPascals
kilometers

Reference Document: 420-TP-015-001, February 1997

Class

AltitudeSystemDefinition

AltitudeEncodingMethod

The means used to encode the altitudes.

Content Source: DP

Domain:

Explicit elevation coordinate included with horizontal coordinates
Implicit coordinate
Attribute Values

Reference Document: 420-TP-015-001, February 1997

Class

AltitudeSystemDefinition

AltitudeResolution

The minimum distance possible between two adjacent altitude values, expressed in Altitude Distance Units of measure.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997

Class

AltitudeSystemDefinition

AnalysisLongName

The expanded or long name of the analysis source identified using AnalysisShortName. AnalysisLongName is intended to categorize collections by the processes which collected (e.g. census survey) or produced them (e.g. NMC 16-level Nested Grid Model).

Content Source: DP (Collection)

Reference Document: 420-TP-015-001, February 1997

Class

AnalysisSource

AnalysisShortName

AnalysisShortName is the unique identifier of the collection or analysis process(s) which best characterize the ECSCollection or Granule. ECSCollections or Granules may be characterized by both a collection and an analysis data set which included data collected using the NWS ASOS network (PlatfromType=Network, PlatformShort-Name= ASOS) which was processed using an NMC analysis model (e.g. AnalysisType=Model, AnalysisShortName= RAFS, AnalysisDescription= Regional Area Forecast System, AnalysisTechnique= Regional Optimal Interpolation.)

Content Source: DP (Collection); PGE (Granule)
Reference Document: 420-TP-015-001, February 1997

Class

AnalysisSource

AnalysisSourceGuidePointer

Logical pointer to the Analysis Source Guide.

Content Source: DAAC

Reference Document: 420-TP-015-001, February 1997.

Class

AnalysisSourceGuide

AnalysisTechnique

The technique or process used to produce the analysis source. (e.g. 16 layer nested grid model)

Content Source: DP (Collection)

Reference Document: 420-TP-015-001, February 1997.

Class

AnalysisSource

AnalysisType

The defined type of analysis source.

Content Source: DP (Collection)

Domain:

Model
Report
Map
Survey
Chart
Publication

Reference Document: 420-TP-015-001, February 1997.

Class

AnalysisSource

AncillaryInputPointer

Data model logical reference to ancillary input data.

Content Source: DSS
Constraints: If ancillary data exists then AncillaryInputPointer exists.

Reference Document: 420-TP-015-001, February 1997.

Class

AncillaryInputGranule

AncillaryInputType

This attribute specifies the type of ancillary input granule.

Content Source: DP

Domain:

Climatology
Geolocation
Meteorological

Reference Document: 420-TP-015-001, February 1997.

Class

AncillaryInputGranule

ArchiveCenter

Center where collection is archived.

Content Source: DAAC
Domain:

GSFC - Goddard Space Flight Center
LaRC - Langley Research Center
ORNL - Oak Ridge National Laboratory
EDC - EROS Data Center
NSIDC - National Snow and Ice Data Center
JPL - Jet Propulsion Laboratory
CIESIN - Consortium for International Earth Science Information Network

Reference Document: 420-TP-015-001, February 1997.

Class

ECSCollection

ArchiveCenterGuidePointer

Logical pointer to the Archive Center Guide.

Content Source: DAAC

Class

ArchiveCenterGuide

ATBDPointer

Data model reference to the document specification.

Content Source: DSS
Constraints: If ATBD exists then ATBDPointer exist.s

Class

ATBD

AuthorAffiliation

The name of an agency or center with which the author of the document works for or is affiliated with.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Author

AuthorName

The name of the author of the document.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Author

AutomaticQualityFlag

The granule level flag applying generally to the granule and specifically to parameters the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developer and documented in the Quality Flag Explanation.

Content Source: PGE; DP
Constraints: One flag from QAFlags must exist.

Domain:

Passed - The granule (forparameter) has passed a specified automatic test.
Failed - The granule (forparameter) has failed a specified automatic test.
Suspect - May be okay; could not clearly define.

Reference Document: 420-TP-015-001, February 1997.

Class

QAFlags

AutomaticQualityFlagExplanation

A text explanation of the criteria used to set automaticl quality flag; including thresholds or other criteria.

Domain:

Free Text

Class

QAFlags

BearingReferenceDirection

Direction from which the bearing is measured clockwise.

Content Source: DP

Domain:

North
South

Reference Document: 420-TP-015-001, February 1997.

Class

DistanceandBearingRepresentation

BearingReferenceMeridian

Axis from which the bearing is measured.

Content Source: DP
Constraints: BearingReferenceMeridian is mandatory if DistanceandBearingRepresentation class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

DistanceandBearingRepresentation

BearingResolution

The minimum angle measurable between two points, expressed in Bearing Units of measure.

Content Source: DP
Constraints: BearingResolution is mandatory if DistanceandBearingRepresentation class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

DistanceandBearingRepresentation

BearingUnits

Units of measure used for angles.

Content Source: DP
Constraints: BearingUnits is mandatory if DistanceandBearingRepresentation class is applicable.

Domain:

Decimal degrees
Decimal minutes
Decimal seconds
Degrees and decimal minutes
Degrees, minutes, and decimal seconds
Grads
Radians

Reference Document: 420-TP-015-001, February 1997.

Class

DistanceandBearingRepresentation

BrowseDescription

Textual description of the Browse granule.

Content Source: DP
Constraints: Must exist if browse produced.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Browse

BrowsePointer

Data model specific logical reference to the browse.

Content Source: DSS
Constraints: If browse product exists then BrowsePointer exists.

Reference Document: 420-TP-015-001, February 1997.

Class

Browse

BrowseSize

Size of Browse Product in MB.

Content Source: TBD
Constraints: assumed to be < 1 MB

Domain:

Free Numerics

Class

Browse

CalendarDate

The year (and optionally month, or month and day). This attribute is used to specify a single date covered by a data collection, granule, or event.

Content Source: DP(collection);PGE(granule)
Constraints:

CalendarDate is mandatory if SingleDateTime class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

SingleDateTime

CampaignEndDate

The ending date of the campaign.

Content Source: DP (Collection)
Constraints: Must be after campaign start date.

Reference Document: 420-TP-015-001, February 1997.

Class

Campaign

CampaignGuidePointer

Logical pointer to the Campaign Guide.

Content Source: DAAC

Reference Document: 420-TP-015-001, February 1997.

Class

CampaignGuide

CampaignLongName

The expanded name of the campaign/experiment (e.g. Global Climate Observing System).

Content Source: DP (Collection)

Domain:

Clouds and the Earth's Radiant Energy

Reference Document: 420-TP-015-001, February 1997.

Class

Campaign

CampaignShortName

The unique identifier by which a campaign/project/experiment is known. The campaign/project is the scientific endeavor associated with the acquisition of the collection. Collections may be associated with multiple campaigns.

Content Source: DP (Collection); PGE (Granule)
Domain:

CERES

Reference Document: 420-TP-015-001, February 1997.

Class

Campaign

CampaignStartDate

The starting date of a campaign/project/experiment.

Content Source: DP (Collection)
Constraints: Must be before campaign end date.

Reference Document: 420-TP-015-001, February 1997.

Class

Campaign

CenterLatitude

Geodetic latitude of center of locality.

Content Source: DP(collection);PGE(granule)
Constraints: West,East,North,South Bounding Coordinate not allowed with center lat/lon Constraints: => -90.0
Constraints: <= +90.0

Reference Document: 420-TP-015-001, February 1997.

Class

Circle

CenterLongitude

Longitude of approximate center of locality.

Content Source: DP(collection);PGE(granule)
Constraints: Not to be used with West,East,North,South Bounding Coordinates. Constraints: <= +180.0
Constraints: => -180.0

Reference Document: 420-TP-015-001, February 1997.

Class

Circle

CitationforExternalPublication

The recommended reference to be used when referring to this collection in publications. Its format is free text, but should include: Orginator (the name of an organization or individual that developed the data set, where Editor(s)' names are followed by (ed.) and Compiler(s)' names are followed by (comp.)); Publication date (the date of publication or release of the data set); Title (the name by which document can be referenced).

Content Source: DP
Alias: Edition
Originator
or Publication Date

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

SingleTypeCollection

City

The city of the person or organization.

Content Source: DP
Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactAddress

CollectionDescription

This attribute identifies the major emphasis of the content of the collection. Some examples are: 'cloud top products generated from instrument X', or 'all products containing the parameter sea surface temperature as skin temp'.

Content Source: DP

Domain:

Free Text
reference RTM ECS ESDT ShortName Baseline and proposed ESDT ShortName Baseline on EDHS

Reference Document: 420-TP-015-001, February 1997.

Class

CollectionDescriptionClass

CollectionState

This attribute describes the state of the collection, whether it is planned but not yet existent, partially complete due to continual additions from remotely sensed data/processing/reprocessing, or is considered a complete product/dataset.

Content Source: DP

Domain:

Completed - All currently planned collection, processing, and reprocessing are complete for this product/ dataset/ collection.

In Work - Data is currently either being collected, processed, or reprocessed for this product/ dataset/ collection.

Planned - Data has not yet been collected or processed for this product/ dataset/ collection, possible candidate for consideration in the collection.

Reference Document: 420-TP-015-001, February 1997.

Class

SingleTypeCollection

CollectionType

Type of associated collection being described. Used to describe the 'geneology' of the collection in terms of other collections and supports production history.

Content Source: DP
Constraints: Must exist when Collection Use is used.

Domain:

Input - Collection used as input or ancillary to this collection.

Dependent - Collections which use this collection as input, including browse.

Science Associated - Collections with which this collection is associated in science terms.

Reference Document: 420-TP-015-001, February 1997.

Class

CollectionAssociation

CollectionUse

Additional comments for all types of associated collections, such as the importance of the input and its use.

Content Source: DP
Constraints: Must exist when Collection Type is used.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

CollectionAssociation

ComponentName

Name of the Component.

Class

SSAPComponent

ComponentType

Name of the Component Type.

Class

SSAPComponent

ContactFirstName

First name of the individual which the contact role (producer, archiver, distributor,or data originator) applies. People are points of contact, rather than organizations, in cases where the association of the person to the data set is more significant than the association of the organization to the data set. They may also be included if both a single person and organization are provided as points of contact.

Content Source: DP
Alias: Contact Person Primary

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactPerson

ContactInstructions

Supplemental instructions on how or when to contact the individual or organization.

Content Source: DP

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Contact

ContactJobPosition

The title of the individual, i.e. Team Leader, Principal Investigator.

Content Source: DP; DAAC

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactPerson

ContactLastName

Last name of the individual which the contact role (producer, archiver, distributor,or data originator) applies. People are points of contact, rather than organizations, in cases where the association of the person to the data set is more significant than the association of the organization to the data set. They may also be included if both a single person and organization are provided as points of contact.

Content Source: DP
Alias: Contact Person Primary
Contact Person
Constraints:
Mandatory if applicable.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactPerson

ContactMiddleName

Middle name of the individual which the contact role (producer, archiver, distributor,or data originator) applies. People are points of contact, rather than organizations, in cases where the association of the person to the data set is more significant than the association of the organization to the data set. They may also be included if both a single person and organization are provided as points of contact.

Content Source: DP
Alias: Contact Person Primary
Contact Person
Constraints:
Mandatory if applicable.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactPerson

ContactOrganizationName

The organization and the member of the organization, associated with the data set. Used in cases where the association of the organization to the data set is more significant than the association of the person to the data set.

Content Source: DP
Alias: Contact Organization
Contact Organization Primary
Constraints:
Mandatory if applicable.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactOrganization

Country

The country of the address.

Content Source: DP

Domain:

use ISO 3166 Maintenance Agency (ftp://ftp.ripe.net/iso3166-countrycodes)

Reference Document: 420-TP-015-001, February 1997.

Class

ContactAddress

CSDTComments

A free text field for the user to add comments clarifying the data structure.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

CSDTDescription

DAACName

The name of the Distributed Active Archive Center which is responsible for the production plan.

Content Source: DAAC

Domain:

GSFC - Goddard Space Flight Center
LaRC - Langley Research Center
ORNL - Oak Ridge National Laboratory
EDC - EROS Data Center
NSIDC - National Snow and Ice Data Center
JPL - Jet Propulsion Laboratory
CIESIN - Consortium for International Earth Science Information Network
SAR - Alaska SAR Facility

Reference Document: 420-TP-015-001, February 1997.

Class

ProductionPlan

DataCenter

The data center supporting the information for which the guide is applicable.

Content Source: DAAC

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Guide

DateofReferencePaperPublication

Contains the date of formal/informal publication of the reference paper.

Content Source: DP
Constraints: if reference papers utilized, this must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

ReferencePaper

DateType

This attribute specifies the type of date represented by the value in the date attributes of the temporal subclasses.

Content Source: DP

Domain:

Julian - (JD)- the internal of time in days and fraction of day since 4713 B.C. January 1, Greenwich noon, Julian proleptic calendar.

Gregorian - Standard calendar dates using B.C., A.D. year, and January 1 through December 31 month and day delineation.

Reference Document: 420-TP-015-001, February 1997.

Class

Temporal

DayNightFlag

This attribute is used to identify if a granule was collected during the day, night (between sunset and sunrise) or both.

Content Source: PGE
Alias: NA
Constraints: TBD

Domain:

Day - between sunrise and sunset
Night - between sunset and sunrise
Both - Includes both 'Day' and 'Night'

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

DeliveryPurpose

This attribute describes the purpose of the delivery e.g., an initial release, modification, etc.

Content Source: DP
Constraints:
If Delivered Algorithm Package is utilized then DeliveryPurpose must exist.

Domain:

Initial Delivery
Early Delivery
Engineering Modification
Operational
Enhancement
SW Patch

Reference Document: 420-TP-015-001, February 1997.

Class

AlgorithmPackage

DenominatorofFlatteningRatio

The ratio of the Earth's major axis to the difference between the major and the minor.

Content Source: DP
Constraints: DenominatorofFlatteningRatio > 0.0
Constraints: DenominatorofFlatteningRatio is mandatory if GeodeticModel class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

GeodeticModel

DepthDatumName

The identification given to surface of reference from which depths are measured.

Content Source: DP
Constraints: DepthDatumName is mandatory if DepthSystemDefinition class is applicable.

Domain:

Approximate lowest astronomical tide
Chart datum; datum for sounding reduction
Columbia River datum
Equatorial springs low water
Gulf Coast low water datum
High-water full and charge
High water
Higher high water
Highest astronomical tide
Indian spring low water
Land survey datum
Local Surface
Low-water full and charge
Low water
Low water datum
Lower low water
Lowest astronomical tide
Lowest low water
Lowest normal low water
Mean high water (MHW)
Mean high water neap
Mean high water springs
Mean higher high water
Mean higher low water
Mean low water (MLW)
Mean low water neap
Mean low water springs
Mean lower high water
Mean lower low water
Mean lower low water springs
Mean sea level (MSL)

Mean tide level
Neap tide
No correction
Spring tide
Tropic lower low water

Class

DepthSystemDefinition

DepthDistanceUnits

Units in which depths are recorded.

Content Source: DP
Constraints: DepthDistanceUnits are mandatory if DepthSystemDefinition class is applicable.

Domain:

fathoms
feet
meters

Reference Document: 420-TP-015-001, February 1997.

Class

DepthSystemDefinition

DepthEncodingMethod

The means used to encode depths.

Content Source: DP
Constraints: DepthEncodingMethod is mandatory if DepthSystemDefinition class is applicable.

Domain:

Attribute Values
Explicit depth coordinate included with horizontal coordinates
Implicit coordinate

Reference Document: 420-TP-015-001, February 1997.

Class

DepthSystemDefinition

DepthResolution

The minimum distance possible between two adjacent depth values, expressed in depth distance units of measure.

Content Source: DP
Constraints: DepthResolution is mandatory if DepthSystemDefinition class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

DepthSystemDefinition

Description

Description of the Advertisement.

Class

AdvertisementDescription

DescriptionType

Contains the type of algorithm description.

Content Source: DAAC

Domain:

System Description
Processing File Description
ATBD
Test Plan
Operations Manual
SW Development Standard
Programmers Guide
Detailed Design
Performance Test Results

Class

AlgorithmDescription

DetailedDesignPointer

Data model logical reference to detailed design document.

Content Source: DSS
Constraints: If Detailed Design Document exist then DetailedDesignPointer must exist.

Class

DetailedDesign

DistanceResolution

The minimum distance measurable between two points, expressed in Planar Distance Units of measure.

Content Source: DP
Constraints: DistanceResolution > 0.0
Constraints: DistanceResolution is mandatory if DistanceandBearingRepresentation class is applicable.
Reference Document: 420-TP-015-001, February 1997.

Class

DistanceandBearingRepresentation

DocumentCreated

The date on which the document was created.

Content Source: DP
Constraints: mandatory for all documents
Reference Document: 420-TP-015-001, February 1997.

Class

Document

DocumentUpdated

The date on which the document was last revised or updated.

Content Source: DP
Constraints: mandatory for all documents
Reference Document: 420-TP-015-001, February 1997.

Content Source: DP (Collection)

Class

Document

DocumentVersion

The version or revision level of the document.

Content Source: DP
Constraints: mandatory for all documents
Reference Document: 420-TP-015-001, February 1997.

Class

Document

EastBoundingCoordinate

Eastern-most limit of coverage expressed in longitude.

Content Source: DP(collection);PGE(granule)
Constraints: EastBoundingCoordinate => -180.0
Constraints: EastBoundingCoordinate <= +180.0

Reference Document: 420-TP-015-001, February 1997.

Class

BoundingRectangle

ECSCollectionGuidePointer

Logical pointer to a specification for the ECS Collection Guide.

Content Source: DAAC

Reference Document: 420-TP-015-001, February 1997.

Class

ECSCollectionGuide

ECSDisciplineKeyword

Keyword used to describe the general discipline area of the collection. A collection can conceivably cover several disciplines.

Content Source: DP
Domain:

Earth Science
Socio-Economics
Space Science

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDiscipline

ECSParameterKeyword

Keyword used to describe specific characteristics of a collection at a higher level of detail than provided by ECSVariableKeyword.

Content Source: DP
Constraints: Controlled keyword

Reference Document: 420-TP-015-001, February 1997.

Class

ECSParameter

ECSTermKeyword

Keyword used to describe the science parameter area of the collection. A collection can conceivably cover many such parameters.

Content Source: DP

Domain:

Aerosols
Air Quality
Altitude
Aquatic Habitat
Atmospheric Chemistry
Atmospheric Phenomena
Atmospheric Pressure
Atmospheric Temperature
Atmospheric Water Vapor
Atmospheric Winds
Attitudes, Preferences, Behavior
Bathymetry
Boundaries
Clouds
Coastal Processes
Devonian
Dew Point
Diagenesis
Diatoms
Differential Flux
Differential Pressure
Diffusion
Dimethyl Sulfide
Discharge/Flow
Diseases
Dispersion
Dissolved Gases
Dissolved Solids
Diurnal Movements
Divergence
Dome Temperature
Domesticated Animals
Domesticated Plants
Dominance
Dominant Species
Doppler Speed
Downwelling
Drainage
Droplet concentration/Size
Droplet Size
Geothermal Energy
Geothermal Temperature
Glaciation
Glaciers
Drought
Dunes
Dust/Ash
Earthquake Dynamics
Earthquake Occurences
Earthquake Predictions
Echinoderms
Ecological Dynamics
Economic Resources
Eddies
Electric Field
Electricity
Electron Flux
Emissions
Emissivity
Endangered Species
Energetic Particles
Energy Deposition
Engineering/Sensor Quantities
Entrainment
Environmental Effects
Eocene
Erosiaon/Sedimentation
Erosion
Eruption Dynamics
Estuaries
Estuarine Habitat
Estuarine Wetlands
Eutrophication
Evaporation
Evaporites
Evapotranspiration
Excretion
Exotic Species
Exotic Vegetation
Extinction
Extinction Coefficients
Faults
Feeding Habitat
Ferns
Ice Pack
Ice Roughness
Ice Sheet Elevation
Ice Sheets
Fetch
Filaments
Fire Occurance
Fish
Fixation
Fjords
Flagellates
Flatworms
Floods
Flowereing Plants
Fluorescence
Fog
Folds
Food-web Dynamics
Food Production
Foraminifers
Forest Composition/ Structure
Forest Habitat
Fossil Fuel Burning
Fracture Zones
Freeze
Freeze/Thaw
Freezing Rain
Fresh Water Flux
Fronts
Frost
Fungi
Gamma Ray
Gas Flaring
Gelbstoff
Geochemistry
Geodetics/Gravity
Geologic Time
Geomagnetic Forecasts
Geomagnetic Indicies
Geomagnetic Induction
Geomagnetism
Geophysical Fields
Geopotential Height
Geothermal
Land Productivity
Land Records
Land Resources
Land Subsidence

Grassland
Gravity
Gravity Field
Gravity Wave
Ground Height
Ground Water
Groundwater Chemistry
Groundwater Quality
Guyots
Gyres
Hail
Halocarbons
Halocline
Heat Flux
Heating Rate
Heavy Ion
Heavy Metals
Herbivory
Holcen
Human Health
Hurricanes
Hydration
Hydraulic Conductivity
Hydrocarbons
Hydrochlorofluorocarbons
Hydrofluorocarbons
Hydrogenous Sediments
Hydropattern
Hydroperiod
Hydrostatic Pressure
Hydrothermal Vents
Hydroxyl
Ice Age
Ice Compactness
Ice Concentration
Ice Core Air Bubble
Ice Core Records
Ice Deformation
Ice Depth/Thickness
Ice Drift
Ice Edges
Ice Extent
Ice Floes
Ice Growth
Ice Motion
Microalgae
Microbiota
Microfossils
Microphyte
Ice Temperature
Ice Types
Ice Velocity
Icebergs
Igneous Rocks
Importance Value
Incoming Shortwave Radiation
Indigenous Species
Indigenous Vegetation
Industrial Emissions
Industrializaiton
Infiltration
Infrared
Infrared Flux
Infrared Imagery
Infrastructure
Inlets
Inorganic Carbon
Inorganic Matter
Insects
Instability
Internal Waves
Intertidal Zone
Inversion Height
Invertebrates
Ion Exchange
Ions
Irradiance
Irrigation
Island Arcs
Islands
Isostatic Rebound
Isotopes
Jellyfish
Jurassic
Kinetic Energy
Lacustrine Wetlands
Lagoons
Lake Ice
Lake Levels
Lakes
Land Classes
Land Cover
Land Heat Capacity
Land Management
Ocean Plateaus/Ridges
Ocean Pressure
Ocean Temperature
Ocean Tracers
Land Surface Temperature
Land Temperature
Land Tenure
Land Use/Land Cover
Landforms
Landslides
Lava
Lead
Leads
Leaf Characteristics
Letter Characteristics
Lichens
Life History
Light Attenuation
Light Transmission
Lightning
Liquid Water Equivalent
Local Subsidence Trends
Loess
Longshore Currents
Longwave Radiation
Macroalgae
Macrofossils
Macrophyte
Magma
Magnetic Anomalies
Magnetic Declination
Magnetic Field
Magnetic Inclination
Magnetic Intensity
Mammals
Mangroves
Marine
Marine Geophysics
Marine Gravity Field
Marine Magnetics
Marine Sediments
Marshes
Maximum/Minimum Temperature
Mesoscale Convective Complex
Mesozoic
Metals
Metamorphic Rocks
Methane
Metorites
Phosphate
Phosphorus
Photic Zone
Photosynthesis

Microwave
Microwave Imagery
Mid-Ocean Ridges
Migratory Rates/Routes
Millipedes
Mine Drainage
Minerals
Miocene
Mixing Height
Molds
Molluscs
Momentum
Monsoons
Montane Habitat
Mosses
Mushrooms
Mutation
Mutualism
Natural Gas
Neotectonics
Net Radiation
Nitrate
Nitrate Particles
Nitric Acid
Nitrite
Nitrogen
Nitrogen Compounds
Nitrogen Dioxide
Nitrogen Oxides
Nitrous Oxide
Non-Metallic Minerals
Non-Methane Hydrocarbons
Nuclear Radiation
Nucleation
Nutrient Cycling
Nutrients
Ocean Acoustics
Ocean Chemistry
Ocean Circulation
Ocean Color
Ocean Crust Deformation
Ocean Currents
Ocean Heat Budget
Ocean Mixed Layer
Ocean Optics
Ocean Water Budget
Ocean Waves
Ocean Winds
Ocean/Lake Records
Oil Spill
Oligocene
Optical Depth
Optical Thickness
Ordovician
Organic Carbon
Organic Matter
Organic Particles
Oscillations
Outgoing Longwave Radiation
Overturning
Oxidation/Reduction
Oxygen
Oxygen Demand
Oxygen Isotopes
Ozone
Paleocene
Paleomagnetic Data
Paleomagnetism
Paleosols
Paleovegetation
Palezoic
Palustrine Wetlands
Parasitism
Particle Composition
Particle Density
Particle Distribution Functions
Particle Flux
Particle Speed
Particle Temperature
Particulate Matter
Particulates
Particule Flux
Peatlands
Pelagic Habitat
Percolation
Permafrost
Permian
Petroleum
pH
Phase and Amplitude
Photosynthesis Active Radiation
Physiological Parameters
Phytoplankton
Pigments
Pipelines
Planetary Boundary Layer
Plankton
Plant Characteristics
Pleistoncene
Pliocene
Polar Motion
Political Divisions
Pollen
Polynyas
Population Dynamics
Post-Breeding
Potential Density
Potential Temperature
Precambrian
Precipitable Water
Precipitation
Precipitation Amount
Precipitation Anomalies
Precipitation Rate
Predation
Pressure Anaomalies
Pressure Tendency
Pressure Thickness
Primary Production
Protist
Proton Flux
Public Health
Pycnocline
Pyroclastics
Quaternary
Radar
Radar Backscatter
Radar Cross-Section
Radar Imagery
Radar Reflectivity
Radiation Budget
Radiative Flux
Radiative Forcing
Radio Wave
Radioactive Elements
Radiocarbon
Radioisotopes
Radiolarians
Rain
Sedimentation
Sediments
Segmented worms
Seiches
Soil Plasticity
Soil Porosity
Soil Productivity
Soil Respiration

Range Changes
Reef Habitat
Reference Fields
Reference Systems
Reflectance
Reforestation
Relief
Reptiles
Respiration
Restoration
Rift Valleys
Riparian Wetlands
River Ice
Rivers/Stream Habitat
Rivers/Streams
Rocks/Minerals
Rocky Coasts
Rotational Variations
Roundworms
Runoff Stage Height
Salar Energetic Particles
Saline Lakes
Salinity
Salinity/Density
Salt Transport
Saltwater Intrusion
Satellite Orbits
Savanna
Scattering
Scavenging
Sea Ice
Sea Level Pressure
Sea Level Rise
Sea State
Sea Surface Height
Seafloor Spreading
Seafloor Topography
Seamounts
Secchi Depth
Secondary Production
Sediment Chemistry
Sediment Composition
Sediment Grain Size
Sediment Transport
Sedimentary Rocks
Suspended Solids
Swamps
Swells
Symbiosis
Seismic Body Waves
Seismic Profile
Seismic Surface Waves
Seismology
Selection
Sensor Counts
Sewage
Shoals
Shoreline Displacement
Shortwave Radiation
Shrubland/Scrub
Sigma Naught
Significant Wave Height
Silicate
Siliceaous Sediments
Silurian
Sink Temperature
Sinkholes
Skin Temperature
Sleet
Slime molds
Smog
Snow
Snow Cover
Snow Depth
Snow Energy Balance
Snow Facies
Snow Melt
Snow Water Equivalent
Snow/Ice
Snow/Ice Temperature
Social Behavior
Soil Absorption
Soil Bulk Density
Soil Chemistry
Soil Color
Soil Companction
Soil Consistence
Soil Depth
Soil Fertility
Soil Heat Budget
Soil Horizons/Profile
Soil Impedence
Soil Mechanics
Soil Moisture
Trenches
Triassic
Tropic Dynamics
Tropopause
Soil Structure
Soil Temperature
Soil Texture
Soil Types
Soils
Solar Active Regions
Solar Activity
Solar Events
Solar Flares
Solar Imagery
Solar Oscilations
Solar Prominences
Solar Radiation
Sponges
Sporozoans
Springs
Stability
Stable Isotopes
Static Pressure
Static Temperature
Station Height
Steamfunctions
Storm Surge
Storms
Stratigraphic Sequence
Stratopause
Stream Chemistry
Stress
Subduction
Sublimation
Submarine Canyons
Succession
Sulfate Particles
Sulfur Dioxide
Sulfur Oxides
Sunshine
Sunspots
Surf Beat
Surface Air Temperature
Surface Pressure
Surface Roughness
Surface Water
Surface Winds
Surveys
Survival
Volcanic Ash/Dust
Volcanic Deposits
Volcanic Gases
Volcanoes

Synoptic Maps
Tectonics
Temperature Anomalies
Terrain Elevation
Terrestrial Habitat
Terrigenous Sediments
Tertiary
Thermal Conductivity
Thermal Inertia
Thermal Infrared
Thermocline
Thermohaline Circulation
Tidal Components
Tidal Currents
Tidal Height
Tidal Range
Tides
Topography
Tornados
Total Surface Water
Toxic Chemicals
Toxicity
Trace Elements
Trace Gases
Trace Metals
Transmittance
Transportation
Tree Rings
Troposheric Ozone
Tsunamis
Turbidity
Turbulence
Typhoons
Ultraviolet
Ultraviolet Flux
Ultraviolet Radiation
Ultraviolet Sensor Temperature
Ununda tion
Upper Level Winds
Upwelling
Urban Land
Urbanization
Varve Deposits
Vegetation
Vegetation Cover
Vegetation Species
Velocity Fields
Vertebrates
Vertical Wind Motion
Virtual Temperature
Visibility
Visible
Visible Flux
Visible Imagery
Vital Statistics
Volatile Organic Compounds
Vorticity
Water Channels
Water Depth
Water Management
Water Masses
Water Quality
Water Table
Water Temperature
Water Vapor
Water Yield
Wave Frequency
Wave Height
Wave Length
Wave Period
Wave Spectra
Wave Speed/Direction
Wave Types
Weathering
Wetlands
Whiteout
Wind-Driven Circulation
Wind Chill
Wind Shear
Wind Stress
X-Ray
Yeast
Zoology
Zooplankton

Reference Document: 420-TP-015-001, February 1997.

Class

ECSTerm

ECSTopicKeyword

Keyword used to describe the general topic area of the collection. A collection can conceivably cover several topics.

Content Source: DP

Domain:

Atmosphere
Biosphere
Cryosphere
Human Dimensions
Hydrosphere
Land Surface
Oceans
Paleoclimate

Radiance or Imagery
Solar Physics
Solid Earth

Reference Document: 420-TP-015-001, February 1997.

Class

ECSTopic

ECSVariableKeyword

Keyword used to describe the specific science parameter content of the collection. A collection can conceivably cover many specific parameters. The keyword valids are the lowest level physical parameter terms which are normally searched by a user; i.e. a user enters a keyword which when found may commect with one or more parameters from collections. The keywords are also the lowest level words which describe product content without being the server specific measurement (held in Parameter class). While there is a controlled list of these parameters held by GCMD, additions can be made by an as yet unspecified configuration control process.

Content Source: DP

Domain:

Ablation	Absorption	Abyssal Hills/Plains
Acid Deposition	Acid Rain	Acoustic Attentuation
Acoustic Frequency	Acoustic Reflectivity	Acoustic Scattering
Acoustic Tomography	Acoustic Velocity	Adaptation
Administrative Divisions	Advection	Aerosol Backscatter
Aerosol Extinction	Age Determinations	Agricultural Land
Agriculture	Air Temperature	Albedo
Algae	Alkalinity	Alpha Particles
Alpine/Tundra	Ambient Noise	Ammonia
Amoebae	Amphibians	Anatomical Parameters
Anemones	Anisotropy	Antenna Temperature
Anticyclones/Cyclones	Aphotic Zone	Aquaculture
Aquifer Rechare	Aquifers	Arachnids
Arthropods	Atmospheric Emitted Radiation	Atmospheric Heating
Atmospheric Pressure	Avalanche	Backscatter
Bacteria	Baraclinic Mode	Barametric Altitude
Baratropic Mode	Barrier Islands	Beaches
Bedrock Lithology	Benthic Habitat	Benthic Heat Flow
Benthic Index	Bidirectional Reflectance	Bioaccumulation
Bioavailability	Biogeochemical Cycles	Bioluminescence
Biomass	Biomass Burning	Biomass Canopy Characteristics
Biomedical Chemicals	Bioturbation	Birds
Blue-Green Algae	Boundary Layer Temperature	Bowen Ratio
Brightness Temperature	Brine Production	Brine Production
Buildings	Buoy Position	Cambrian
Carbon	Carbon Dioxide	Carbon Monoxide
Carbonaceous Aerosols	Carbonate	Carbonate Sediments
Carboniferous	Carbonyl Sulfide	Carcinogens
Cave Deposits	Caves	Cenozoic

Centipeds
Chemical Weathering
Chemosynthesis
Chlorine Monoxide
Chlorofluorocarbons
Chlorophyll
Ciliates
Cloud Amount
Cloud Ceiling
Cloud Condensation Nuclei
Cloud Forcing
Cloud Height
Cloud Ice
Cloud Liquid Water
Cloud Optical Thickness
Cloud Precipitable Water
Cloud Top Pressure
Cloud Top Temperature
Cloud Types
Cloud Vertical Distribution
Coal
Coastal Elevation
Coastal Habitat
Communications
Community Structure
Competition
Condensation
Conduction
Conductivity
Conifers
Consumer Behavior
Consumption
Contaminants
Continental Drift
Continental Rises/Slopes
Continental Shelves
Continental Tectonics
Contours
Control Surveys
Convection
Convergence/Divergence
Coral Deposits
Coral Reefs
Corals
Core Processes
Corona Holes
Coronal Properties
Cretaceous
Crops
Crown
Crustaceans
Crustal Motion
Crystals
Cultureal Features
Cyclones
Deciduous Vegetation
Decomposition
Deforestation
Degradation
Degree Days
Deiced Temperature
Deltas
Dendrification Rate
Density
Depth Hoar
Desalinizaiton
Desert
Desertification
Devonian
Dew Point
Diagenesis
Diatoms
Differential Flux
Differential Pressure
Diffusion
Dimethyl Sulfide
Discharge/Flow
Diseases
Dispersion
Dissolved Gases
Dissolved Solids
Diurnal Movements
Divergence
Dome Temperature
Domesticated Animals
Domesticated Plants
Dominance
Dominant Species
Doppler Speed
Downwelling
Drainage
Droplet concentration/Size
Droplet Size
Drought
Dunes
Dust/Ash
Earthquake Dynamics
Earthquake Occurences
Earthquake Predictions
Echinoderms
Eddies
Electric Field
Electricity
Electron Flux
Emissions
Emissivity
Endangered Species
Energetic Particles
Energy Deposition
Entrainment
Eocene
Erosion
Eruption Dynamics
Estuaries
Estuarine Habitat
Estuarine Wetlands
Eutrophication
Evaporation
Evaporites
Evapotranspiration
Excretion
Exotic Species
Exotic Vegetation
Extinction
Extinction Coefficients
Faults
Feeding Habitat
Ferns
Fetch
Filaments
Fire Occurance
Fish
Fixation
Fjords
Flagellates
Flatworms
Floods
Flowereing Plants
Fluorescence
Fog
Folds
Food-web Dynamics
Food Production
Foraminifers
Forest Composition/ Structure
Forest Habitat
Fossil Fuel Burning
Fracture Zones
Freeze
Freeze/Thaw

Freezing Rain
Frost
Gelbstoff
Geomagnetic Induction
Geothermal Temperature
Grassland
Gravity Wave
Groundwater Quality
Hail
Heat Flux
Heavy Metals
Hurricanes
Hydrocarbons
Hydrogenous Sediments
Hydrostatic Pressure
Ice Age
Ice Core Air Bubble
Ice Drift
Ice Floes
Ice Pack
Ice Sheets
Ice Velocity
Importance Value
Indigenous Vegetation
Infiltration
Inlets
Insects
Intertidal Zone
Ion Exchange
Irrigation
Isostatic Rebound
Jurassic
Lagoons
Lakes
Land Heat Capacity
Land Resources
Land Tenure
Lava
Leaf Characteristics
Life History
Lightning
Loess
Macroalgae
Magma
Magnetic Field
Mammals
Marine Gravity Field
Maximum/Minimum Temperature
Metals
Metorites
Fresh Water Flux
Gamma Ray
Geomagnetic Forecasts
Geopotential Height
Glaciation
Gravity
Ground Height
Guyots
Halocarbons
Heating Rate
Herbivory
Hydration
Hydrochlorofluorocarbons
Hydropattern
Hydrothermal Vents
Ice Compactness
Ice Deformation
Ice Edges
Ice Growth
Ice Roughness
Ice Temperature
Icebergs
Incoming Shortwave Radiation
Industrial Emissions
Infrared Flux
Inorganic Carbon
Instability
Inversion Height
Ions
Island Arcs
Isotopes
Kinetic Energy
Lake Ice
Land Classes
Land Management
Land Subsidence
Landforms
Lead
Letter Characteristics
Light Attenuation
Liquid Water Equivalent
Longshore Currents
Macrofossils
Magnetic Anomalies
Magnetic Inclination
Mangroves
Marine Magnetics
Mesoscale Convective Complex
Metamorphic Rocks
Microalgae
Fronts
Gas Flaring
Geomagnetic Indicies
Geothermal Energy
Glaciers
Gravity Field
Groundwater Chemistry
Gyres
Halocline
Heavy Ion
Holcen
Hydraulic Conductivity
Hydrofluorocarbons
Hydroperiod
Hydroxyl
Ice Concentration
Ice Depth/Thickness
Ice Extent
Ice Motion
Ice Sheet Elevation
Ice Types
Igneous Rocks
Indigenous Species
Industrializaiton
Infrared Imagery
Inorganic Matter
Internal Waves
Invertebrates
Irradiance
Islands
Jellyfish
Lacustrine Wetlands
Lake Levels
Land Cover
Land Productivity
Land Surface Temperature
Landslides
Leads
Lichens
Light Transmission
Local Subsidence Trends
Longwave Radiation
Macrophyte
Magnetic Declination
Magnetic Intensity
Marine
Marshes
Mesozoic
Methane
Microfossils

Microphyte
Migratory Rates/Routes
Minerals
Molds
Monsoons
Mushrooms
Natural Gas
Nitrate
Nitrite
Nitrogen Dioxide
Non-Metallic Minerals
Nucleation
Ocean Color
Ocean Mixed Layer
Ocean Tracers
Optical Depth
Organic Carbon
Oscillations
Oxidation/Reduction
Oxygen Isotopes
Paleomagnetic Data
Paleovegetation
Parasitism
Particle Distribution Functions
Particle Temperature
Particule Flux
Percolation
Petroleum
Phosphate
Photosynthesis
Phytoplankton
Planetary Boundary Layer
Pleistoncene
Political Divisions
Population Dynamics
Potential Temperature
Precipitation Amount
Predation
Pressure Thickness
Proton Flux
Pyroclastics
Radar Cross-Section
Radiative Flux
Radioactive Elements
Radiolarians
Reef Habitat
Reflectance
Reptiles
Rift Valleys
Rivers/Stream Habitat
Microwave Imagery
Millipedes
Miocene
Molluscs
Montane Habitat
Mutation
Neotectonics
Nitrate Particles
Nitrogen
Nitrogen Oxides
Non-Methane Hydrocarbons
Nutrient Cycling
Ocean Crust Deformation
Ocean Plateaus/Ridges
Oil Spill
Optical Thickness
Organic Matter
Outgoing Longwave Radiation
Oxygen
Ozone
Paleomagnetism
Palezoic
Particle Composition
Particle Flux
Particulate Matter
Peatlands
Permafrost
pH
Phosphorus
Photosynthesis Active Radiation
Pigments
Plankton
Pliocene
Pollen
Post-Breeding
Precambrian
Precipitation Anomalies
Pressure Anaomalies
Primary Production
Public Health
Quaternary
Radar Imagery
Radiative Forcing
Radiocarbon
Rain
Reference Fields
Reforestation
Respiration
Riparian Wetlands
Rivers/Streams
Mid-Ocean Ridges
Mine Drainage
Mixing Height
Momentum
Mosses
Mutualism
Net Radiation
Nitric Acid
Nitrogen Compounds
Nitrous Oxide
Nuclear Radiation
Nutrients
Ocean Currents
Ocean Pressure
Oligocene
Ordovician
Organic Particles
Overturning
Oxygen Demand
Paleocene
Paleosols
Palustrine Wetlands
Particle Density
Particle Speed
Particulates
Pelagic Habitat
Permian
Phase and Amplitude
Photic Zone
Physiological Parameters
Pipelines
Plant Characteristics
Polar Motion
Polynyas
Potential Density
Precipitable Water
Precipitation Rate
Pressure Tendency
Protist
Pycnocline
Radar Backscatter
Radar Reflectivity
Radio Wave
Radioisotopes
Range Changes
Reference Systems
Relief
Restoration
River Ice
Rocky Coasts

Rotational Variations
Saline Lakes
Saltwater Intrusion
Scattering
Sea Level Rise
Seafloor Spreading
Secchi Depth
Sediment Composition
Sedimentary Rocks
Segmented worms
Seismic Profile
Sensor Counts
Shoreline Displacement
Sigma Naught
Siliceaous Sediments
Sinkholes
Slime molds
Snow Cover
Snow Facies
Snow/Ice Temperature
Soil Bulk Density
Soil Companction
Soil Fertility
Soil Impedence
Soil Plasticity
Soil Respiration
Soil Texture
Solar Events
Solar Oscilations
Sponges
Stability
Static Temperature
Storm Surge
Stratopause
Subduction
Succession
Sulfur Oxides
Surf Beat
Surface Roughness
Survival
Swells
Temperature Anomalies
Tertiary
Thermal Infrared
Tidal Components
Tidal Range
Toxic Chemicals
Trace Gases
Transportation
Triassic
Roundworms
Salinity
Satellite Orbits
Scavenging
Sea State
Seafloor Topography
Secondary Production
Sediment Grain Size
Sedimentation
Seiches
Seismic Surface Waves
Sewage
Shortwave Radiation
Significant Wave Height
Silurian
Skin Temperature
Smog
Snow Depth
Snow Melt
Social Behavior
Soil Chemistry
Soil Consistence
Soil Heat Budget
Soil Mechanics
Soil Porosity
Soil Structure
Soil Types
Solar Flares
Solar Prominences
Sporozoans
Stable Isotopes
Station Height
Storms
Stream Chemistry
Sublimation
Sulfate Particles
Sunshine
Surface Air Temperature
Surface Winds
Suspended Solids
Symbiosis
Terrain Elevation
Thermal Conductivity
Thermocline
Tidal Currents
Tornados
Toxicity
Trace Metals
Tree Rings
Tropic Dynamics
Runoff Stage Height
Salt Transport
Savanna
Sea Level Pressure
Sea Surface Height
Seamounts
Sediment Chemistry
Sediment Transport
Sediments
Seismic Body Waves
Selection
Shoals
Shrubland/Scrub
Silicate
Sink Temperature
Sleet
Snow
Snow Energy Balance
Snow Water Equivalent
Soil Absorption
Soil Color
Soil Depth
Soil Horizons/Profile
Soil Moisture
Soil Productivity
Soil Temperature
Solar Active Regions
Solar Imagery
Solar Radiation
Springs
Static Pressure
Steamfunctions
Stratigraphic Sequence
Stress
Submarine Canyons
Sulfur Dioxide
Sunspots
Surface Pressure
Surveys
Swamps
Synoptic Maps
Terrigenous Sediments
Thermal Inertia
Thermohaline Circulation
Tidal Height
Total Surface Water
Trace Elements
Transmittance
Trenches
Tropopause

Troposheric Ozone	Tsunamis	Turbidity
Turbulence	Typhoons	Ultraviolet Flux
Ultraviolet Radiation	Ultraviolet Sensor Temperature	Ununda tion
Upper Level Winds	Upwelling	Urban Land
Urbanization	Varve Deposits	Vegetation Cover
Vegetation Species	Velocity Fields	Vertebrates
Vertical Wind Motion	Virtual Temperature	Visibility
Visible Flux	Visible Imagery	Vital Statistics
Volatile Organic Compounds	Volcanic Ash/Dust	Volcanic Deposits
Volcanic Gases	Vorticity	Water Channels
Water Depth	Water Management	Water Masses
Water Table	Water Temperature	Water Vapor
Water Yield	Wave Frequency	Wave Height
Wave Length	Wave Period	Wave Spectra
Wave Speed/Direction	Wave Types	Weathering
Wetlands	Whiteout	Wind-Driven Circulation
Wind Chill	Wind Shear	Wind Stress
X-Ray	Yeast	Zooplankton

Reference Document: 420-TP-015-001, February 1997.

Class

ECSVariable

ElectronicMailAddress

The address of the electronic mailbox of the organization or individual. The address, following NASA Global Change Master Directory format, should be of the form 'network name>network address'. Examples of network names are NSN, SPAN, telemail, ARPANET, and Internet. Examples of network addresses are NSSDCA::NG, MIKEMARTIN/NASA, MMARTIN@JPL.MILVAX, or mikem@eos.hitc.com.

Content Source: DP
Alias: Email address

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Email

EllipsoidName

Identification given to established representation of the Earth's shape.

Content Source: DP
Constraints: EllipsoidName is mandatory if GeodeticModel class is applicable.

Domain:

Airy 1940 - applies to UK
Australian National 1965 - applies to Australia
Bessel 1841
Clarke 1866
Clarke 1880
Everest 1830 - applies to Asia
Geodetic Reference System 1980 (GRS80)
Hough
International 1909 (Hayford)
Krassovsky 1940 - applies to former USSR
Mercury 1960 (Fischer 1960) - supports early heritage NASA satellite
Modified Airy - applies to UK
Modified Everest - applies to Asia
Modified Mercury 1968 (Modified Fischer 1960) - supports early heritage NASA satellite
New International 1967
World Geodetic System of 1966 (WGS66)
World Geodetic System of 1972 (WGS72)
World Geodetic System of 1984 (WGS84)

Reference Document: 420-TP-015-001, February 1997.

Class

GeodeticModel

EndsatPresentFlag

This attribute will denote that a data collection which covers, temporally, a discontinuous range, currently ends at the present date. This way, the granules which comprise the data collection that are continuously being added to inventory need not update the data collection metadata for each one. Note that MODIS granules may be added several thousand times a day, making the update of the data collection metadata impractical.

Content Source: DSS

Domain:

Y = Yes, does end at present time.
N = No, does not end at present time.

Reference Document: 420-TP-015-001, February 1997.

Class

Temporal

EquatorCrossingDate

This attribute represents the date of the descending equator crossing.

Content Source: PGE

Reference Document: 420-TP-015-001, February 1997.

Class

OrbitCalculatedSpatialDomain

EquatorCrossingLongitude

This attribute represents the terrestrial longitude of the descending equator crossing.

Content Source: PGE
Reference Document: 420-TP-015-001, February 1997.
Class

OrbitCalculatedSpatialDomain

EquatorCrossingTime

This attribute represents the time of the descending equator crossing.

Content Source: PGE
Reference Document: 420-TP-015-001, February 1997.
Class

OrbitCalculatedSpatialDomain

ExclusionGRingFlag

Flag which determines if the coordinates represent the Outer or Exclusion G-Ring.

Content Source: PGE(granule); DP(collection)
Constraints: ExclusionGRingFlag is mandatory if GRing class is applicable.
Domain:
Y - Value denotes geodetic latitude or longitude of the starting point of arc of an inner (exclusion) G-Ring.

N - Value denotes geodetic latitude or longitude of the starting point of an arc of an outer G-Ring.
Reference Document: 420-TP-015-001, February 1997.
Class

GRing

ExpirationDate

Date Advertisement expired.
Class

AdvertisementMaster

FtpURL

Universal Resource Locator that contains a reference to the location of an installable package.

Class

InstallableServiceAdvertisement

FutureReviewDate

Date of next planned QA peer review.

Content Source: DP; PGE

Reference Document: 420-TP-015-001, February 1997.

Class

Review

GeographicalRegionName

Contains a name for the geographical region the Regional Area Definition Guide applies to. Example values could be: Nile Delta, Sahel Zone, Mississippi Valley, Sudanian Zone, Amazon Basin, Grand Canyon...

Content Source: DP
Constraints: if class utilized, this must exist.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

RegionalAreaDefinitionGuide

GeographicCoordinateUnits

Units of measure used for the geodetic latitude and longitude resolution values. For lat, a 2 digit decimal number from 0-90; for lon, a 3 digit decimal number from 0-180. + or absence of - for values north of equator or values west of prime meridian; - for all others.

Content Source: DP
Constraints: GeographicCoordinateUnits are mandatory if GeographicCoordinateSystem class is applicable.

Domain:

Decimal Degrees
Decimal Minutes
Decimals Seconds
Degrees and Decimal Minutes
Degrees, minutes, and decimal seconds
Radians

Grads

Reference Document: 420-TP-015-001, February 1997.

Class

GeographicCoordinateSystem

GIParameterList

Describes the parameters that should be passed to a service when the service is executed. The content of the list is dependent upon the type of service (i.e. acquire, browse, subset, etc.).

Content Source: IOS

Class

SignatureServiceAdvertisement

GranulePointer

Pointer to granule specification.

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

GridCoordinateSystemName

Name of the Grid Coordinate System. A plane-rectangular coordinate system usually based on, and mathematically adjusted to a map projection so that geographic positions can be readily transformed to and from plane coordinates. The zone identifier can be allocated per granule; hence the class 'ZoneIdentifier'.

Content Source: DP
Constraints:
If GridCoordinateSystem is used, zone identifier must be used.

Domain:

Universal Transverse Mercator (UTM) - Requires UTM zone number, 1-60 for Northern Hemisphere, -60 to -1 for Southern Hemisphere

Other Grid System - Requires description in lieu of zone identifier which includes name, parameters and values, and citation of the specification for the algorithms that describe the mathematical relationship between the Earth and the coordinates of the grid system.

Reference Document: 420-TP-015-001, February 1997.

Class

GridCoordinateSystem

GRingPointLatitude

The geodetic latitude of a point of the G-ring.

Content Source: DP(collection);PGE(granule)
Constraints: GRingPointLatitude <= +90.0
Constraints: GRingPointLatitude is mandatory if GRingPoint class is applicable. Constraints: -90.0 <= GRingPoint-Latitude.

Reference Document: 420-TP-015-001, February 1997.

Class

GRingPoint

GRingPointLongitude

The longitude of a point of the G-Ring.

Content Source: DP(collection);PGE(granule)
Constraints: GRingPointLongitude is mandatory if GRingPoint class is applicable. Constraints: GRingPointLongitude <= +180.0
Constraints: GRingPointLongitude >= -180.0

Reference Document: 420-TP-015-001, February 1997.

Class

GRingPoint

GRingPointSequenceNo

Value denotes the numerical sequence position of a G-Ring point.

Content Source: DP(collection);PGE(granule)
Constraints: GRingPointSequenceNo is mandatory if GRingPoint class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

GRingPoint

GuideName

The name of the guide document.

Content Source: DAAC

Domain:

Regional Area Definition Guide
Archive Center Guide
Processing Center Guide

Campaign Guide
Platform Guide
Instrument Guide
ECS Collection Guide
Sensor Guide
Analysis Guide

Reference Document: 420-TP-015-001, February 1997.

Class

Guide

HorizontalDatumName

The identification given to the reference system used for defining the coordinates of points.

Content Source: DP

Domain:

North American Datum of 1927 (NAD27)

North American Datum of 1983 (NAD83)

Reference Document: 420-TP-015-001, February 1997.

Class

GeodeticModel

HoursofService

Time period when individuals can speak to the organization or individuals.

Content Source: DAAC

Reference Document: 420-TP-015-001, February 1997.

Class

Contact

Implementation

The name of the implemented form of the CSDT (standard formats, industry standards etc.), including lowest level object description.

Domain:

HDF-EOS - HDF-EOS Datatypes for implementation: HDF Attribute, HDF Attributes, HDF Vdata, HDF (RIS8, RIS24), HDF SDS, SDS with attributes, multiple HDF SDSs, multiple Vdatas.
ASCII
HDF
Binary
netCDF

NMC GRIB
CCSDS - Consultative Committee for Space Data Systems establishes variety of standard formats e.g. time, telemetry packages, metadata, etc.

Reference Document: 420-TP-015-001, February 1997.

Class

CSDTDescription

IndirectReference

Name of object by which data are organized. Name is the ESDT related or other local name other than the formal CSDT reference. i.e. 2.5 degree bins for CERES, 5 degree bins for CERES, and source packets for level 0.

Content Source: DP

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

CSDTDescription

InputPointer

Data model logical reference to Input Granule.

Reference Document: 420-TP-015-001, February 1997.

Class

InputGranule

InstrumentCharacteristicDataType

The datatype of the instrument characteristic/attribute defined by InstrumentCharacteristicName.

Content Source: DP (Collection)
Constraints: Must exist if SensorCharacteristicValue exists

Domain:

int
varchar
datetime
date
time
float

Reference Document: 420-TP-015-001, February 1997.

Class

InstrumentCharacteristic

InstrumentCharacteristicDescription

The description of the instrument attribute.

Content Source: DP (Collection)
Reference Document: 420-TP-015-001, February 1997.
Class

InstrumentCharacteristic

InstrumentCharacteristicName

The name of the instrument characteristic attribute. Instrument characteristic are instrument-specific attributes.

Content Source: DP (Collection)
Constraints: Must conform to ECS attribute naming guidelines. Primary Key.
Reference Document: 420-TP-015-001, February 1997.
Class

InstrumentCharacteristic

InstrumentCharacteristicUnit

The units of the attribute defined with InstrumentCharacteristic.

Content Source: DP (Collection)
Reference Document: 420-TP-015-001, February 1997.
Class

InstrumentCharacteristic

InstrumentCharacteristicValue

The value of the Instrument/attribute defined in InstrumentCharacteristic. Attributes must have single values.

Content Source: DP (Collection)
Constraints: Abstract class instantiated as either int:string:date:float.
Reference Document: 420-TP-015-001, February 1997.
Class

InstrumentCharacteristicValueClass

InstrumentGuidePointer

Logical pointer to the Instrument Guide.

Content Source: DAAC
Reference Document: 420-TP-015-001, February 1997.
Class

InstrumentGuide

InstrumentLongName

The expanded name of the primary sensory instrument. (e.g. Advanced Spaceborne Thermal Emission and Reflective Radiometer, Clouds and the Earth's Radiant Energy System, Human Observation)

Content Source: DP (Collection)
Domain:

Clouds and the Earth's Radiant Energy System

Moderate-Resolution Imaging Spectroradiometer

Measurements of Pollution in the Troposphere

Multi-Angle Imaging SpectroRadiometer

Stratospheric Aerosol and Gas Experiment III

Land Remote-Sensing Satellite

Enhanced Thematic Mapper Plus

Clouds and the Earth's Radiant Energy System Flight Model 1

Clouds and the Earth's Radiant Energy System Flight Model 2
Reference Document: 420-TP-015-001, February 1997.
Class

Instrument

InstrumentShortName

The unique identifier of an instrument. (e.g. ASTER, AVHRR-3, CERES, Human)

Content Source: DP (Collection); PGE (Granule)

Domain:

ASTER
CERES
MODIS
MOPITT
MISR
SAGE III
ETM+
CERES FM1
CERES FM2

Reference Document: 420-TP-015-001, February 1997.

Class

Instrument

InstrumentTechnique

The instrument method or procedure. (e.g. radiometer, manual enumeration)

Content Source: DP (Collection)

Domain:

Broadband scanning radiometry
Self-calibrating solar/lunar occultation grating spectrometer
Solar Occultation

Lunar Occultation
Scanning Radiometer
Earth Limb-Scanning Grating Spectroradiometer

Reference Document: 420-TP-015-001, February 1997.

Class

Instrument

Internal Name

Internal service name for ECS subsystem use only.

Class

SignatureServiceAdvertisement

JournalArticleName

The name of the journal article.

Content Source: DP
Constraints: must exist if article does.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

JournalArticle

JournalArticlePointer

Data model logical reference to Journal Article.

Content Source: DSS
Constraints: if journal article exists, this must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

JournalArticle

LatitudeResolution

The minimum difference between two adjacent latitude values expressed in Geographic Coordinate Units of measure.

Content Source: DP
Constraints: LatitudeResolution > 0.0
Constraints: LatitudeResolution is mandatory if GeographicCoordinateSystem class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

GeographicCoordinateSystem

LocalCoordinateSystemDescription

A description of the coordinate system and its orientation to the surface of the Earth.

Content Source: DP
Constraints: LocalCoordinateSystemDescription is mandatory if LocalCoordinateSystem class is applicable.

Domain:

Free Text
Central Body, Fixed (CBF)
Central Body, Inertial (CBI)
Local Horizontal (LH)
Vertical Vehicle Local Horizontal (VVLH)g

Reference Document: 420-TP-015-001, February 1997.

Class

LocalCoordinateSystem

LocalGeoreferenceInformation

A description of the information provided to register the local system to the Earth (e.g. control points, satellite ephemeral data, inertial navigation data).

Content Source: DP
Constraints: LocalGeoreferenceInformation is mandatory if LocalCoordinateSystem class is applicable.

Domain:

Free Text

Class

LocalCoordinateSystem

LocalGranuleID

Unique identifier for locally produced granule that ECS ingests and is required to capture.

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

LocalityDescription

This attribute provides the rationale behind including this locality definition in ECS. It should include the area of Earth Science research that requires such a definition, a description of what the locality represents in general terms, and a brief description or reference to a description of the method used as the source of the definition.

Content Source: DP
Constraints: must exist if locality type does.

Reference Document: 420-TP-015-001, February 1997.

Class

Locality

LocalityType

Type of entity for which space/time extent is defined. Spatial and temporal domain will be used to define coverage of the data granule; or to define the varying spatial extent over time, of some geophysical event/ phenomena eg. Mid-west Flood of 93, or of certain seasons throughout the world, eg. monsoon season, or spring. It may be used to define the spatial and/or temporal extent of a 'region', be it geophysical or geopolitical in nature. The value is applied at the granule level.

Content Source: DP
Constraints: mandatory if class is applicable and if granule locality is used.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

Locality

LocalityValue

Provides name which spatial/temporal entity is known. This could change on a granule by granule basis. This attribute is paralleled by the AggregationType which applies at the collection level although locality has a more restricted usage. Several locality measures could be included in each granule.

Content Source: PGE

Domain:

Canada/R - Regional Canada sites
Cryos - Cryosphere
Land - Global land surface
Land/Cryos - Land ice and Snow regions.
Land/CZ - Land w/ Coastal Zone
Land/L - Local land sites
Land/R - Regional land sites
Limb - Limb sounding
Local Surfac - Local sites
Ocean/Cryos - Regions with sea ice
Ocean/I - Ocean with Case I sediments
Ocean/II - Ocean with Case II sediments
Ocean/L - Local oceanic sites
Ocean/R - Regional oceanic sites
Ocean/S - Southern Ocean
Ocean/SA - Southern & Eastern North Atlantic
Polar - Latitudes > 60 degrees N and S
Tropic - Zonal Band 35 degrees N to 35 degrees S
Wetlands - Global wetlands

Reference Document: 420-TP-015-001, February 1997.

Class

GranuleLocality

LocalPlanarCoordinateSystemDescription

A description of the local planar coordinate system.

Content Source: DP
Constraints: LocalPlanarCoordinateSystemDescription is mandatory if LocalPlanarCoordinateSystem class is applicable.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

LocalPlanarCoordinateSystem

LocalPlanarGeoreferenceInformation

A description of the information provided to register the local planar system to the Earth (e.g. control points, satellite ephemeral data, inertial navigation data)

Content Source: DP
Constraints: LocalGeoreferenceInformation is mandatory if LocalCoordinateSystem class is applicable.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

LocalPlanarCoordinateSystem

LocalVersionID

Local version identifier for PGE defined granule versions.

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

LongitudeResolution

The minimum difference between two adjacent longitude values expressed in Geographic Coordinate Units of measure.

Content Source: DP
Constraints: LongitudeResolution is mandatory if GeographicCoordinateSystem class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

GeographicCoordinateSystem

LongName

This attribute will identify the long name associated with the collection. This includes dataset name/product name. This is the reference name used in describing the scientific contents of the data collection; it is not the 'id' of the data. The existing SPSO product names provide a start point.

Content Source: DP
Alias: dataset name

product name
Constraints: must be unique

Domain:

reference RTM ECS ESDT LongName Baseline and proposed ESDTLongName Baseline on EDHS

Reference Document: 420-TP-015-001, February 1997.

Class

CollectionDescriptionClass

MaintenanceandUpdateFrequency

The frequency with which changes and additions are made to the collection after the initial dataset begins to be collected/processed.

Content Source: DP

Domain:

Continually - The collection is updated more frequently than once a day.

Daily - The collection is updated once per day, every day.

Weekly - The collection is updated once per week.

Monthly - The collection is updated once per calendar month.

Annually - The collection is updated once per year; the first date of update is usually one year after the first date of receipt of data from this collection's source.

Unknown

As Needed - The collection is updated as determined by the Principal Investigator or according to on-demand requests from end users.

Irregular - The collection is updated on an unscheduled but periodic basis.

None Planned - The collection is complete and therefore will not be updated further.

Reference Document: 420-TP-015-001, February 1997.

Class

SingleTypeCollection

MapProjectionName

The name of the systematic representation of all or part of the surface of the Earth on a plane or developable surface.

Content Source: DP
Constraints: MapProjectionName is mandatory if MapProjection class is applicable.

Domain:

Lambert Azimuthal Equal Area - Requires standard parallel, longitude and scale factor of central meridian, latitude/longitude and scale factor of projection origin, false easting and northing, scale factor at equator & center line, height of perspective point above the surface, latitude/longitude of projection center, oblique line azimuth (angle+lat of origin), oblique line point (lat/lon), straight vertical longitude from pole.

Polar Stereographic - Requires standard parallel, longitude and scale factor of central meridian, latitude/longitude and scale factor of projection origin, false easting and northing, scale factor at equator & center line, height of perspective point above the surface, latitude/longitude of projection center, oblique line azimuth (angle+lat of origin), oblique line point (lat/lon), straight vertical longitude from pole.

Space Oblique Mercator B - Requires standard parallel, longitude and scale factor of central meridian, latitude/longitude and scale factor of projection origin, false easting and northing, scale factor at equator & center line, height of perspective point above the surface, latitude/longitude of projection center, oblique line azimuth (angle+lat of origin), oblique line point (lat/lon), straight vertical longitude from pole, plus the Landsat Satellite Number and the Path Number reflecting the orbit if the Landsat satellite.

Transverse Mercator - Requires standard parallel, longitude and scale factor of central meridian, latitude/longitude and scale factor of projection origin, false easting and northing, scale factor at equator & center line, height of perspective point above the surface, latitude/longitude of projection center, oblique line azimuth (angle+lat of origin), oblique line point (lat/lon), straight vertical longitude from pole.

Lambert Conformal Conic

Mercator

Polyconic

Integerized Sinusoidal Grid

Interrupted Goode Homolosine - A pseudocylindrical composite derived form the Sinusoisal and Mollweide projections.

Reference Document: 420-TP-015-001, February 1997.

Class

MapProjection

MapProjectionPointer

This is a data modeling logical reference to a map projection.

Reference Document: 420-TP-015-001, February 1997.

Class

MapProjection

MultipleDateName

The name of the collection of discrete date/time events.
e.g. 'LIS 10/93 series'

Content Source: DP

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

MultipleDateTimePeriod

NorthBoundingCoordinate

Northern-most coordinate of the limit of coverage expressed in geodetic latitude.

Content Source: DP(collection);PGE(granule)
Constraints: NorthBoundingCoordinate <= +90.0
Constraints: NorthBoundingCoordinate => -90.0
Constraints: NorthBoundingCoordinate => SouthBoundingCoordinate

Reference Document: 420-TP-015-001, February 1997.

Class

BoundingRectangle

NumberofSensors

The number of discrete (if any) sensors on an instrument.

Content Source: DP (Collection)
Constraints: Must correspond to sensors associated via SensorShortName

Reference Document: 420-TP-015-001, February 1997.

Class

Instrument

OperationalQualityFlag

The granule level flag applying both generally to a granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the QualityFlagExplanation.

Content Source: DAAC
Constraints: One flag from QAFlags must exist.

Domain:

Passed - The granule (forparameter) has passed a specified operational test.

Failed - The granule (forparameter) has failed a specified operational test.

Being Investigated - The granule (forparameter) is suspect and being investigated using a operational test.

Reference Document: 420-TP-015-001, February 1997.

Class

QAFlags

OperationalQualityFlagExplanation

A text explanation of the criteria used to set operational quality flag; including thresholds or other criteria.

Domain:

Free Text

Class

QAFlags

OperationMode

Mode of operation of the instrument. Each instrument will have 1 to n modes which may be static for the collection, or change on a granule-by-granule basis. (e.g. domains: launch, survival, initialization, safe, diagnostic, roll, tilt, stand-by, routine, test, calibration).

Content Source: DP(collection);PGE(granule)

Domain:

Calibration
Diagostic
Fixed azimuth plane scan
Initialization
Launch
Normal
Roll
Rotating azimuth plane scan
Routine
Safe
Solar calibration
Standby
Survival
Test
Tilt

Reference Document: 420-TP-015-001, February 1997.

Class

OperationModeClass

OperationsManualPointer

Data model logical reference to Operations Manual.

Content Source:
Constraints: If Operations Manual exists then OperationsManualPointer must exist.

Class

OperationsManual

OrbitalModelName

The reference to the orbital model to be used to calculate the geolocation of this data in order to determine global spatial extent.

Content Source: DP
Constraints: ObritModelName is mandatory if OrbitCalculatedSpatialDomain class is applicable.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

OrbitCalculatedSpatialDomain

OrbitNumber

The orbit number to be used in calculating the spatial extent of this data.

Content Source: PGE
Constraints: constraints should be provided per satellite
Constraints: OrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.
Constraints: Orbitnumber > 0

Reference Document: 420-TP-015-001, February 1997.

Class

OrbitCalculatedSpatialDomain

OrbitParametersPointer

Data model reference to the orbit parameter information.

Content Source: DSS
Constraints: Orbit file must exist if OrbitParametersPointer is used.

Reference Document: 420-TP-015-001, February 1997.

Class

OrbitParametersGranule

OrdinateResolution

The (nominal) minimum distance between the 'y' or row values of two adjacent points, expressed in Planar Distance Units of measure. Planar Distance Units of measure are units for distances whose domain values are meters, international feet, and survey feet.

Content Source: DP
Constraints: Ordinate Resolution > 0.0

Reference Document: 420-TP-015-001, February 1997.

Class

CoordinateRepresentation

PackageSize

Size of Package for the Installable Service. Each package size contains 'x' bytes.

Class

InstallableServiceAdvertisement

ParameterMeasurementResolution

This attribute will be used to identify the smallest unit increment to which the parameter value is measured.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

PhysicalParameterDetails

ParameterName

The measured science parameter expressed in the data granule.

Class

MeasuredParameter

ParameterRange

This attribute provides maximum and minimum value of parameter over whole collection.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

PhysicalParameterDetails

ParameterUnitsofMeasurement

The standard units of measurement for a non-core attribute. AVHRR: Units of Geophysical Parameter=Units of Geophysical Parameter

Content Source: DP
Constraints: If ParameterValue exists then ParameterUnitsofMeasurement exist.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

PhysicalParameterDetails

ParameterValue

The values that can be assigned to a parameter name used at collection and granule level. The datatype for this attribute is the value of the attribute ParameterDatatype. The unit for this attribute is the value of the attribute ParameterUnitsofMeasurement.

Content Source: DP(collection); PGE(granule)
Constraints: If ParameterValue exists then the class ECSParameter must exist. Constraints: If parameter is physical then units must exist.

Domain:

Free Text - Other values at the collection and granule level.

Reference Document: 420-TP-015-001, February 1997.

Class

InformationContent

ParameterValueAccuracy

An estimate of the accuracy of the assignment of attribute value. i.e. AVHRR: Measurement Error of a data product parameter. This can be specified in percent or the units with which the parameter is measured.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

PhysicalParameterDetails

ParameterValueAccuracyExplanation

This defines the method used for determining the Parameter Value Accuracy that is given for this non core attribute.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

PhysicalParameterDetails

PerformanceTestResultsPointer

Data model logical reference to Performance Test Results document.

Content Source: DSS
Constraints: If Performance Test Results exist then PerformanceTestResultsPointer must exist.

Class

PerformanceTestResults

Period1stDate

This attribute provides the date of the first occurrence of this regularly occurring period which is relevant to the collection, granule, or event coverage.

Content Source: DP
Constraints:
Period1stDate is mandatory if RegularPeriodic class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

Period1stTime

This attribute denotes the time of the first occurrence of this regularly occurring period which is relevant to the collection, granule, or event coverage.

Content Source: DP
Constraints:
Period1stTime is mandatory if RegularPeriodic class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

PeriodCycleDurationUnit

The unit specification of the period cycle duration.
e.g. the RegularPeriodic event 'Spring-North Hemi' might have a
PeriodDurationUnit='month'
PeriodDurationValue=3.0

PeriodCycleDurationUnit='year'
PeriodCycleDurationValue='1.0
indicating that Spring-North Hemi lasts for 3.0 months and has a cycle duration of 1 year.
Example values include:
decade,
year,
month,
week,
day,
hour,
minute,
second,
microsecond,
millisecond

Content Source: DP
Constraints:
PeriodCycleDurationUnit is mandatory if RegularPeriodic class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

PeriodCycleDurationValue

The number of PeriodCycleDurationUnits in the period cycle.
e.g. the RegularPeriodic event 'Spring-North Hemi' might have a PeriodDurationUnit='month'
PeriodDurationValue=3.0
PeriodCycleDurationUnit='year'
PeriodCycleDurationValue='1.0
indicating that Spring-North Hemi lasts for 3.0 months and has a cycle duration of 1.0 year.
The unit for this attribute is the value of the attribute PeriodCycleDurationUnit.

Content Source: DP
Constraints:
PeriodCycleDurationValue > 0.0 if used.
Constraints:
PeriodCycleDurationValue is mandatory if RegularPeriodic class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

PeriodDurationUnit

The unit specification for the period duration.
Example values include:
decade,
year,

month,
week,
day,
hour,
minute,
second,
microsecond,
millisecond

Content Source: DP
Constraints:
PeriodDurationUnit is mandatory if RegularPeriodic class is used.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

PeriodDurationValue

The number of PeriodDurationUnits in the RegularPeriodic period.
e.g. the RegularPeriodic event 'Spring-North Hemi' might have a PeriodDurationUnit='month'
PeriodDurationValue=3.0
PeriodCycleDurationUnit='year'
PeriodCycleDurationValue='1.0
indicating that Spring-North Hemi lasts for 3.0 months and has a cycle duration of 1.0 year.
The unit for the attribute is the value of the attribute PeriodDurationValue.

Content Source: DP
Constraints:
PeriodDurationValue > 0.0 if used.
Constraints:
PeriodDurationValue is mandatory if RegularPeriodic class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

PeriodName

The name given to the recurring time period.
e.g. 'spring - north hemi.'

Content Source: DP
Constraints:
PeriodName is mandatory if RegularPeriodic class is used.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

RegularPeriodic

PGEDateLastModified

Date when PGE information was last modified.

Class

AlgorithmPackage

PGEFunction

Function(s) performed by PGE.

Content Source: DP
Constraints:
If Delivered Algorithm Package is utilized then PGEFunction must exist.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

AlgorithmPackage

PGEIdentifier

Each PGE is to have a unique identifier assigned by the SDPS/W developer. This unique identifier may be one component of a longer name that includes instrument acronym, PGE version number, and release date.

Content Source: DP; DAAC
Constraints:
If Delivered Algorithm Package is utilized then PGEIdentifier exists.

Reference Document: 420-TP-015-001, February 1997.

Class

AlgorithmPackage

PGEName

Name of Product Generation Executive.

Content Source: DP

Constraints:
If Delivered Algorithm Package is utilized then PGEName exists.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

AlgorithmPackage

PGEVersion

Version of PGE, updated whenever code or any static is input in the Delivered Algorithm Package.

Content Source: DP
Constraints:
If Delivered Algorithm Package is utilized then PGEVersion must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

AlgorithmPackage

PlanarCoordinateEncodingMethod

The means used to represent horizontal positions in the planar coordinate system.

Content Source: DP
Constraints: PlanarCoordinateEncodingMethod is mandatory if map projection, grid coordinate system, or local planar coordinate system is used.

Domain:

Coordinate Pair - Will require description of encoding method in 'Coordinate Representation' in terms of abscissa and ordinate resolutions.

Distance and Bearing - Will require encoding method description using 'Distance and Bearing Representation', in terms of distance resolution, bearing resolution, bearing units, bearing reference direction, and bearing reference meridian.

Row and Column - Will require encoding method description using 'Coordinate Representation', in terms of abscissa and ordinate resolutions.Reference Document: 420-TP-015-001, February 1997.

Class

PlanarCoordinateInformation

PlanarDistanceUnits

Units of measure used for planar coordinate description distances.

Content Source: DP

Constraints: PlanarDistanceUnits are mandatory if map projection, grid coordinate system, or local planar coordinate system is used.

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

PlanarCoordinateInformation

PlannedDataSets

Copy of content of line 5 of Production Plans; containing collection ShortName to be produced.

Content Source: PLS

Reference Document: 420-TP-015-001, February 1997.

Class

ProductionPlan

PlatformCharacteristicDataType

The datatype of the Platform Characteristic/attribute defined by PlatformCharacteristicName.

Content Source: DP (Collection).

Domain:

int
varchar
datetime
date
time
float

Reference Document: 420-TP-015-001, February 1997.

Class

PlatformCharacteristic

PlatformCharacteristicDescription

Description of the Platform Characteristic attribute.

Content Source: DP (Collection)

Reference Document: 420-TP-015-001, February 1997.

Class

PlatformCharacteristic

PlatformCharacteristicName

The name of the Platform Characteristic attribute.

Content Source: DP (Collection)
Reference Document: 420-TP-015-001, February 1997.
Class

PlatformCharacteristic

PlatformCharacteristicUnit

Units associated with the Platform Characteristic attribute value.

Content Source: DP (Collection)
Reference Document: 420-TP-015-001, February 1997.
Class

PlatformCharacteristic

PlatformCharacteristicValue

The value of the characteristic/attribute defined in PlatformCharacteristic. Attributes must have single values. (e.g. Model Number = 209).

Content Source: DP (Collection)
Reference Document: 420-TP-015-001, February 1997.
Class

PlatformCharacteristicValueClass

PlatformGuidePointer

Logical pointer to the Platform Guide.

Content Source: DAAC
Reference Document: 420-TP-015-001, February 1997.
Class

PlatformGuide

PlatformLongName

The expanded or long name of the platform associated with an instrument.

Content Source: DP (Collection)
Domain:
Ante Meridian-1

Landsat-7
Meteor-3M
Reference Document: 420-TP-015-001, February 1997.
Class

Platform

PlatformShortName

The unique platform name. (e.g. GOES-8)

Content Source: DP(Collection); PGE(Granule)
Domain:
Meteor -3M

L7 - Landsat-7

AM-1
Reference Document: 420-TP-015-001, February 1997.
Class

Platform

PlatformType

The most relevant platform type.

Content Source: DP (Collection); PGE (Granule)
Domain:
Aircraft (incl. ballons)
Buoy
Human
Network
Other (e.g. animal mounted instruments)
Platform
Spacecraft
Station
Vehicle
Vessel (Ship)

Reference Document: 420-TP-015-001, February 1997.

Class

Platform

PointLatitude

A single geodetic latitudinal value.

Content Source: DP(collection);PGE(granule)
Constraints: PointLatitude is mandatory if Point class is applicable.
Constraints: PointLatitude => -90.0 Constraints: PointLatitude <= +90.0

Reference Document: 420-TP-015-001, February 1997.

Class

Point

PointLongitude

A single longitudinal value.

Content Source: DP(collection);PGE(granule)
Alias: Decimal Degrees
Constraints: PointLongitude is mandatory if Point class is applicable.
Constraints: PointLongitude => -180.0 Constraints: PointLongitude <= +180.0

Reference Document: 420-TP-015-001, February 1997.

Class

Point

PostalCode

The zip or other postal code of the address.

Content Source: DP; DAAC

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactAddress

PrecisionofSeconds

The precision (position in number of places to right of decimal point) of seconds used in measurement.

Content Source: DP

Constraints:
PrecisionofSeconds => 0

Class

Temporal

PrimaryCSDT

The name of the CSDT type of data organization (data type and sub type). Computer Science Data Types are the physical storage types required to support Earth Science Data Types(ESDTs), the logical objects seen in pyramid views.

Content Source: DP; DAAC
Alias: Data Format
Domain:

Plain ASCII Text - Free-form textual structure for storing labels or long descriptions for display.

RTF Formatted ASCII Text - Formatted text for transfer in Rich Text Format.

HTML Formatted ASCII Text - Formatted text for transfer in HyperText Markup Language.

PS Formatted ASCII Text - Formatted text for transfer in Postscript.

PDF Formatted ASCII Text - Formatted text for transfer in Portable Document Format.

Binary ASCII Text - Text and graphics document in document processing application proprietary format.

P=V Metadata -' Label=Value' where label is a field name and value is either a single value or list of values.

Standard Science Data Table - Binary and/or ASCII tabular data.

Indexed Science Data Table - Binary and/or ASCII tabular data which includes indices to other data objects.

Image - 2D raster data type.

n-Dim Array of Records - Binary n-dimensional array of cells that consist of records. A record can consist of multiple fields of varying type such as integer, floating point and string.

n-Dim Array of Scalars - Binary n-dimensional array of cells that consist of scalars of a single type. (e.g., one of 8-, 16- or 32-bit signed or unsigned integers; or 32- or 64-bit floating point). Can be conceptually viewed as an instantiation of the Array of Records where each record is a single field.

Projected Grid - Data which has been projected and binned into a rectangular grid using a known methodology. Metadata such as projection name, projection limits, and geometry are included in order to identify geo-location and coverage of grid cells.

Structured Grid - Data which has been projected and binned into a non-rectilinear data structure using a known methodology. Metadata such as projection name, projection limits, and geometry are included in order to identify geo-location and coverage of data structure cells.

Simple Swath - Typically, swath data arrays will be two dimensional arrays, corresponding to a 2D 'image' of the ground along the orbital track. Sometimes, though, swath data arrays may be 1D arrays, where there is one element

per scan (time, altitude, etc.). Additionally, swath data arrays could have 3 or more dimensions, where the additional dimensions are channel number or altitude. A 'simple' swath structure is designated where every data array is of the same size and resolution.

Complex Swath - Created by a sensor making N observations in the across-track direction. The along-track direction causes the footprint to from a ribbon of M scans along the subnadir track. The data forms an array of observations N by M by L (where L is the number of spectral band values taken for each observation time). An additional array of geo-location or observation time data is provided at a resolution equal or lower than the observations. The Complex Swath may have observations of varying resolution.

Standard Point - Data made up of records and fields with some set of fields constituting a point location. Fields can be of any type. The location fields, taken together, can be considered the 'location record'. Metadata constituting 'header' data which applies to the entire table is included.

Indexed Point - Data made up of records and fields with some set of fields constituting a point location. Fields can be of any type including pointers. The location fields, taken together, can be considered the 'location record'. Some fields may be repeated for a set of observations; these fields may be separated as part of a 'header', table which would include pointers, offsets. and counts to the repeating data table or tables.

Structure - Group of datatypes. e.g. HDF Vgroup

Reference Document: 420-TP-015-001, February 1997.

Class

CSDTDescription

ProcessingCenter

Center where collection was or is being processed. i.e. name of DAAC or SCF.

Content Source: DP; DAAC

Domain:

GSFC - Goddard Space Flight Center
LARC - Langley Research Center
ORNL - Oak Ridge National Laboratory
EDC - EROS Data Center
NSIDC - National Snow and Ice Data Center
JPL - Jet Propulsion Laboratory
CIESIN - Consortium for International Earth Science Information Network
EDOS - EOS Data and Operations System
MISR SCF/LARC - MISR Science Computing Facility at LARC

Reference Document: 420-TP-015-001, February 1997.

Class

ECSCollection

ProcessingCenterGuidePointer

Logical pointer to the Processing Center Guide.

Content Source: DAAC

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingCenterGuide

ProcessingErrorReportPointer

Data model reference to Processing Error Report specification.

Content Source: PLS

Class

ProcessingErrorReport

ProcessingFileDescriptionPointer

Data model logical reference to Processing File Description document.

Content Source: DSS
Constraints: If Processing File Description exists then ProcessingFileDescriptionPointer must exist.

Class

ProcessingFileDescription

ProcessingLevelDescription

This attribute provides a set of characteristics that can be combined to define science processing levels which do not conform to the standards found in ProcessingLevelID.

Content Source: DP

Domain:

RAW - Raw instruments.
CNTS - Converted to counts.
RADCORR - Radiometrically corrected.
GEOQUANT - Counts converted to geophysical quantities.
GEOLOC - Geolocated.
GRID - Gridded.
Sensor Measurements
Radiometric Counts
Telemetry Data
Level 1B Radiances
Geophysical Quantities at the sensor resolution or geolocated

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingLevel

ProcessingLevelID

This attribute reflects the classification of the science data processing level, which defines in general terms the characteristics of the output of the processing performed.

Content Source: DP

Domain:

0 - Row instrument data at original resolution, time ordered, with duplicate packets removed.

1A - Level 0 data, which may have been reformatted or transformed reversibly, located to a coordinate system, and packaged with needed ancillary and engineering data.

1B - Radiometrically corrected and calibrated data in physical units at full instrument resolution as acquired.

2 - Retrieved environmental variables (e.g., ocean wave height, soil moisture, ice concentration) at the same location and similar resolution as the Level 1 source data.

3 - Data or retrieved environmental variables that have been spatially and/or temporarily resampled (i.e., derived from Level 1 or Level 2 data products). Such resampling may include averaging and compositing.

4 - Model output and/or variables derived from lower level data which are not directly measured by the instruments. For example, new variables based upon a time series of Level 2 or Level 3 data.

Not Available

Not Applicable - Under review by AHWGP.

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingLevel

ProcessingQAAttribute

This attribute identifies the non-science QA attribute which did not meet pre-defined parameter thresholds during validation processing.

Content Source: PDPS

Domain:

CalendarDate
EquatorCrossingDate
EquatorCrossingLongitude
EquatorCrossingTime
LocalityValue
OrbitModelName
OrbitNumber
ParameterValue
RangeBeginningDate
RangeBeginningTime
RangeEndingDate

RangeEndingTime
ReprocessingActual
ReprocessingPlanning
ShortName
SizeMBECSDataGranule
StartOrbitNumber
StopOrbitNumber
TimeofDay
VerticalSpatialDomainType
VerticalSpatialDomainValue

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingQA

ProcessingQADescription

This attribute provides description of the error encountered during processing for the specified Processing QA Attribute.

Content Source: PDPS

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingQA

ProcessingReportPeriod

Period of processing report in day(s).

Content Source: PLS

Domain:

90
30
7
3
1

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingReport

ProcessingReportType

Type of processing report supplied by Planning Subsystem.

Content Source: PLS

Domain:

Status
Error
Resource Usage

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingReport

ProcessingResourceUsageReportPointer

Data model logical reference to the Processing Resource Usage Report.

Content Source: PLS

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingResourceUsageReport

ProcessingStatusReportPointer

Data model logical reference to the Processing Status Report.

Content Source: PLS

Reference Document: 420-TP-015-001, February 1997.

Class

ProcessingStatusReport

ProductionDateTime

The date and time a specific granule was produced by a PGE.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

ProductionHistoryPointer

Data model logical reference to the granule level production history file.

Content Source: DSS
Constraints: Production History log must exist.
Reference Document: 420-TP-015-001, February 1997.
Class

ProductionHistory

ProductionPlanDescription

The description of the production plan.

Content Source: PLS
Domain:
Free Text
Reference Document: 420-TP-015-001, February 1997.
Class

ProductionPlan

ProductionPlanEndDate

The ending date for which the production plan is applicable.

Content Source: PLS
Reference Document: 420-TP-015-001, February 1997.
Class

ProductionPlan

ProductionPlanForecast

The span of time within the plan (measured in days). i.e. the forecast horizon within the production plan.

Content Source: PLS
Reference Document: 420-TP-015-001, February 1997.
Class

ProductionPlan

ProductionPlanPointer

Logical pointer to the production plans produced by the ECS Planning Subsystem.

Content Source: DSS
Constraints: must exist for all ECS-produced products.
Reference Document: 420-TP-015-001, February 1997.

Class

ProductionPlan

ProductionPlanStartDate

The beginning date for which the production plan is applicable.

Content Source: PLS
Constraints: must exist for all ECS-produced products.
Reference Document: 420-TP-015-001, February 1997.

Class

ProductionPlan

ProgrammersGuidePointer

Data model logical reference to Programmers Guide document.

Content Source: DSS
Alias:
Constraints:
If Programmers Guide exists then ProgrammersGuidePointer must exist.

Class

ProgrammersGuide

ProviderURL

URL of the Advertisement provider.

Content Source: IOS

Class

ProviderAdvertisement

QAGranulePointer

Data model logical reference to QA Granule.

Content Source: DSS
Constraints: If QAGranule exists then QAGranulePointer must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

QAGranule

QAPercentCloudCover

This attribute is used to characterize the cloud cover amount of a granule. This attribute may be repeated for individual parameters within a granule. (Note - there may be more than one way to define a cloud or it's effects within a product containing several parameters; i.e. this attribute may be parameter specific)

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

QAStats

QAPercentInterpolatedData

Granule level % interpolated data. This attribute can be repeated for individual parameters within a granule.

Content Source: PGE

Reference Document: 420-TP-015-001, February 1997.

Class

QAStats

QAPercentMissingData

Granule level % missing data. This attribute can be repeated for individual parameters within a granule.

Content Source: PGE

Reference Document: 420-TP-015-001, February 1997.

Class

QAStats

QAPercentOutofBoundsData

Granule level % out of bounds data. This attribute can be repeated for individual parameters within a granule.

Content Source: PGE
Constraints: mandatory

Reference Document: 420-TP-015-001, February 1997.

Class

QAStats

QualityTextCommentPointer

Data model logical reference to collection level pointer to Quality Text Comment document.

Content Source: DSS
Constraints: If QualityText exists then QualityTextCommentPointer exists.
Reference Document: 420-TP-015-001, February 1997.

Class

QualityTextComment

RadiusUnits

The unit of measurement describing the distance from the center of spatial extent or coverage to the furthest point covered by the spatial extent of the locality used to determine a circular region representing general extent or cover-age.

Content Source: DP(collection);PGE(granule)
Reference Document: 420-TP-015-001, February 1997.

Class

Circle

RadiusValue

The distance from the center of spatial extent or coverage to the furthest point covered by the spatial extent of the locality, stated in RadiusUnits, used to determine a circular region representing general extent or coverage.

Content Source: DP(collection);PGE(granule)
Reference Document: 420-TP-015-001, February 1997.

Class

Circle

RangeBeginningDate

The year (and optionally month, or month and day) when the temporal coverage period being described began.

Content Source: DP(collection);PGE(granule)
Alias: Start Date
Constraints:
RangeBeginningDate is mandatory if RangeDateTime class is used.
Reference Document: 420-TP-015-001, February 1997.

Class

RangeDateTime

RangeBeginningTime

The first hour (and optionally minute, or minute and second) of the temporal coverage period being described.

Content Source: DP(collection);PGE(granule)
Constraints:
RangeBeginningTime is mandatory if RangeDateTime class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RangeDateTime

RangeEndingDate

The last year (and optionally month, or month and day) of the temporal coverage period being described.
GSFC AVHRR This date represents the end date of the latest granule contained in the product.

MM/DD/YY format is product-specific for: sage_atmos_dyn, sage_atmos_comp, erbe_erp

MMDDYYYY format is product-specific for: LARC_FIRE, LARC_GTE
Content Source: DP(collection);PGE(granule)
Constraints:
RangeEndingDate is mandatory if RangeDateTime class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RangeDateTime

RangeEndingTime

The last hour (and optionally minute, or minute and second) of the temporal coverage period being described for granule or collection.

Content Source: DP(collection);PGE(granule)
Constraints:
RangeEndingTime is mandatory if RangeDateTime class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

RangeDateTime

ReferencePaperReference

Contains the unique ID of the Reference Paper as issued by publisher, such as 'NOS NSG 5', or 'JPL Publication 91-29'.

Content Source: DP
Constraints: if reference papers utilized, this must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

ReferencePaper

ReferencePaperType

Contains the type of reference paper.

Content Source: DP
Constraints: if reference papers utilized, this must exist.

Domain:

Stand Alone Document

Journal Article

Class

ReferencePaper

RegionalAreaDefinitionGuidePointer

Logical pointer to the Regional Area Definition Guide.

Content Source: DSS
Constraints: if guide exists, this must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

RegionalAreaDefinitionGuide

ReprocessingActual

Granule level, stating what reprocessing has been performed on this granule.

Content Source: PGE
Constraints:
Constrained to number of times reprocessed.

Domain:

processed once
reprocessed once

reprocessed twice

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

ReprocessingPlanned

Granule level, stating what reprocessing may be performed on this granule.

Content Source: PGE

Domain:

no futher update anticipated
further update is anticipated
further update anticipated using enhanced PGE

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

RevisionDate

Represents the date and possibly the time that this directory entry was created or the latest date and time of its modification or update.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

ECSCollection

Role

Classification of individuals who are associated with a given data set.

Content Source: DP
Constraints:
Mandatory if contact is used.

Domain:

Archive
Funding Source
Producer
Distributor
Data Originator
Investigator
Investigator ID

Reference Document: 420-TP-015-001, February 1997.

Class

Contact

ScienceQualityFlag

Granule level flag applying to a granule, and specifically to parameters. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Quality Flag Explanation.

Content Source: PGE(granule)
Constraints: One flag from QAFlags must exist.

Domain:

Passed - The granule (forparameter) has passed a specified science test.
Failed - The granule (forparameter) has failed a specified science test.
Being Investigated - The granule (forparameter) is being investigated by an expert.
Validated - The granule (forparameter) has been validated by an expert.

Reference Document: 420-TP-015-001, February 1997.

Class

QAFlags

ScienceQualityFlagExplanation

A text explanation of the criteria used to set science quality flag; including thresholds or other criteria.

Content Source: DP

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

QAFlags

ScienceReviewDate

Date of last QA peer review.

Content Source: DP; PGE

Reference Document: 420-TP-015-001, February 1997.

Class

Review

ScienceReviewStatus

Type of Review which occurred on the 'Science Review Date'

Content Source: DP; PGE

Domain:

QC at DAACs - In general, the DAACs role in the QC process will be to ensure the integrity of the data (non-science quality control) -- i.e. data are not corrupted in the transfer, archival or retrieval process. DAACs may also perform science quality control (though an SCF responsibility) through pre-arranged agreements with their instrument teams.

QC at SCF - The SCFs role in the QC process of collections will be to ensure science quality control of data products over the length of the data gathering process. Techniques such as trend anlysis of the data may be applied within this context.

QC by Data Consumers - Data consumers who utilize the datasets will perform an indirect method of quality control, uncovering errors within the datasets as they perfrom their research . Much of this documentation may be found in journal article or conference papers.

None - The status must be set, and cannot default to having been completed. None also applies to those data which are ingested from external sources and are not known to have been subjected to any form of quality control, or have quality ratings for which the definitions are not available.

Reference Document: 420-TP-015-001, February 1997.

Class

Review

SemiMajorAxis

Radius of the equatorial axis of the ellipsoid.

Content Source: DP
Constraints: SemiMajorAxis > 0.0 Constraints: SemiMajorAxis mandatory if GeodeticModel class is applicable.

Reference Document: 420-TP-015-001, February 1997.

Class

GeodeticModel

SensorCharacteristicDataType

The datatype of the Instrument Characteristic/attribute defined by InstrumentCharacteristicName.

Content Source: DP (Collection)

Domain:

int
varchar
datetime
date

time
float

Reference Document: 420-TP-015-001, February 1997.

Class

SensorCharacteristic

SensorCharacteristicDescription

A description of the attribute defined by SensorCharacteristicName. (e.g. SensorCharacteristicName=SensorDevice, SensorCharacteristicDescription= Charge coupled device).

Content Source: DP (Collection)
Constraints: Use to define single-valued sensor attributes, not new objects.

Reference Document: 420-TP-015-001, February 1997.

Class

SensorCharacteristic

SensorCharacteristicName

The name of the Sensor Characteristic/attribute. Sensor attributes defined using SensorCharacteristicName must be single-valued attributes of the object 'Sensor' and not attributes of undefined objects.

Content Source: DP (Collection); PGE (Granule)
Constraints: Used to define sensor attributes, not objects associated with sensors.

Reference Document: 420-TP-015-001, February 1997.

Class

SensorCharacteristic

SensorCharacteristicUnit

The unit of the Sensor Characteristic (e.g. nanometers).

Content Source: DP (Collection)

Reference Document: 420-TP-015-001, February 1997.

Class

SensorCharacteristic

SensorCharacteristicValue

The value of the attribute defined in the class SensorCharacteristicDescription. Attributes must have single values.

Content Source: DP (Collection); PGE (Granule)

Constraints: Domain defined by SensorCharacteristicDataType

Reference Document: 420-TP-015-001, February 1997.

Class

SensorCharacteristicValueClass

SensorGuidePointer

Logical pointer to the Sensor Guide.

Content Source: DAAC Alias:

Reference Document: 420-TP-015-001, February 1997.

Class

SensorGuide

SensorLongName

The generic or long name description of a sensor. (e.g. Visible-Near Infrared, Human Visual, Human Auditory)

Content Source: DP (Collection)
Alias: Detector Long Name

Domain:

Enhanced Thematic Mapper Plus
Shortwave Scanning Thermistor Bolometer Detector
Total Scanning Thermistor Bolometer Detector
Window Scanning Thermistor Bolometer Detector
Charged Coupled Devicebased
PIN Diode Spectrometer Radiometry
Shortwave Infrared
Thermal Infrared
Visible Near Infrared
Charged Coupled Devicebased Pushbroom Nadir Viewing Camera A
Charged Coupled Devicebased Pushbroom Fore Viewing Camera A
Charged Coupled Devicebased Pushbroom Aft Viewing Camera A
Charged Coupled Devicebased Pushbroom Nadir Viewing Camera B
Charged Coupled Devicebased Pushbroom Fore Viewing Camera B
Charged Coupled Devicebased Pushbroom Aft Viewing Camera B
Charged Coupled Devicebased Pushbroom Nadir Viewing Camera C
Charged Coupled Devicebased Pushbroom Fore Viewing Camera C
Charged Coupled Devicebased Pushbroom Aft Viewing Camera C
Charged Coupled Devicebased Pushbroom Nadir Viewing Camera D
Charged Coupled Devicebased Pushbroom Fore Viewing Camera D
Charged Coupled Devicebased Pushbroom Aft Viewing Camera D

Reference Document: 420-TP-015-001, February 1997.

Class

Sensor

SensorShortName

A sensor is a defined sensory sub-component of an instrument. (e.g. InstrumentShortName=ASTER, NumberofSensors= 3, SensorShortName= SWIR, SensorShortName= TIR, SensorShortName= VNIR) In cases where the Instrument has a single Sensor or the Instrument and Sensor are synonomous then both attributes should be populated. (e.g. AVHRR). Sensors cannot exist without Instruments.

Content Source: DP (Collection); PGE (Granule)
Alias: Detector Short Name

Domain:

CCD
CCD Camera Aa
CCD Camera Af
CCD Camera An
CCD Camera Ba
CCD Camera Bf
CCD Camera Bn
CCD Camera Ca
CCD Camera Cf
CCD Camera Cn
CCD Camera Da
CCD Camera Df
CCD Camera Dn
ETM+
PIN Diode
Shortwave Detector
SWIR
TIR
Total Detector
VNIR
Window Detector

Reference Document: 420-TP-015-001, February 1997.

Class

Sensor

SensorTechnique

The sensor technique. (e.g. laser altimetry)

Content Source: DP (Collection)

Domain:

Broadband Termistor Bolometer
Spectrometry

Reference Document: 420-TP-015-001, February 1997.

Class

Sensor

SequenceNumber

Line number for description over 255 positions.

Class

AdvertisementDescription

ServiceClass

This attribute describes the class of service. (e.g. subset)

Content Source: IOS, DSS

Reference Document: 420-TP-015-001, February 1997.

Class

SignatureServiceAdvertisement

ServiceName

The name of the service, such as SubsetByParameter which belongs to the ServiceClass Subset.

Content Source: IOS, DSS

Reference Document: 420-TP-015-001, February 1997.

Class

SignatureServiceAdvertisement

ServiceURL

URL that references the service for a MIME type service advertisement. This URL is what would be invoked to access the service.

Content Source: IOS

Class

MimeServiceAdvertisement

ShortName

This name will identify the short name associated with the collection or granule. This includes the ECS Technical Baseline product names, i.e. CER02, MOD12, etc. This is the official reference name used in identifying the contents of the data collection.

Content Source: DP
Constraints: must be unique

Domain:

reference RTM ECS ESDT ShortName Baseline and proposed ESDT ShortName Baseline on EDHS

Reference Document: 420-TP-015-001, February 1997.

Class

CollectionDescriptionClass

SizeMBECSDataGranule

The size attribute will indicate the volume of data contained in the granule.

Content Source: PGE
Constraints:
mandatory for granule

Reference Document: 420-TP-015-001, February 1997.

Class

ECSDataGranule

SouthBoundingCoordinate

Southern-most limit of coverage expressed in geodetic latitude.

Content Source: DP(collection);PGE(granule)
Constraints: SouthBoundingCoordinate => -90.0
Constraints: SouthBoundingCoordinate <= +90.0
Constraints: SouthBoundingCoordinate <= NorthBoundingCoordinate

Reference Document: 420-TP-015-001, February 1997.

Class

BoundingRectangle

SpatialCoverageType

This attribute denotes whether the locality/coverage requires horizontal, vertical, or both in the spatial domain and co-ordinate system definitions.

Content Source: DP

Domain:

Horizontal & Vertical
Horizontal
Vertical

Reference Document: 420-TP-015-001, February 1997.

Class

Spatial

SpatialKeyword

This attribute specifies a word or phrase which serves to summarize the spatial regions covered by the collection. It may be repeated if several regions are covered. This often occurs when a collection is described as covering some large region, and several smaller subregions within that region.

Content Source: DP
Alias: Location
Location Keyword
Domain:

Africa	Antarctica	Arctic Ocean
Asia	Atlantic Ocean	Equatorial
Europe	Global	Indian Ocean
Mid-Latitude	North America	Pacific Ocean
South America	Southern Ocean	Central America
Oceania	North Africa	Central Africa
West Africa	Southern Africa	East Africa
Western Asia	Central Asia	Southern Asia
Southeast Asia	Eastern Asia	Western Europe
Eastern Europe	Middle East	Northern Hemisphere
Southern Hemisphere	Eastern Hemisphere	Western Hemisphere
North Atlantic Ocean	North Pacific Ocean	South Atlantic Ocean
South Pacific Ocean	Baltic Sea	Bering Sea
Black Sea	Caribbean Sea	East China Sea
Gulf of Mexico	Hudson Bay	North Sea
Red Sea	Sea of Japan	Sea of Okhotsk
South China Sea	Yellow Sea	Afghanistan
Albania	Algeria	American Samoa
Andorra	Angola	Anguilla
Antigua and Barbuda	Argentina	Armenia
Australia	Austria	Azerbaijan
Bahamas	Bahrain	Bangladesh
Barbados	Belarus	Belgium
Belize	Benin	Bermuda
Bhutan	Bolivia	Bosnia and Herzegovina
Botswana	Brazil	Brunei Darussalam
Bulgaria	Burkina Faso	Burma
Burundi	Cambodia	Cameroon
Canada	Cape Verde	Central African Republic
Chad	Chile	China
Colombia	Comoros	Congo
Cook Islands	Costa Rica	Cote d'Ivoire
Croatia	Cuba	Cyprus

Czech Republic	Denmark	Djibouti
Dominica	Dominican Republic	Ecuador
Egypt	El Salvador	Equatorial Guinea
Eritrea	Estonia	Ethiopia
Fiji	Finland	France
Gabon	Gambia	Georgia
Germany	Ghana	Greece
Grenada	Guam	Guatemala
Guinea	Guinea-Bissau	Guyana
Haiti	Holy See	Honduras
Hungary	Iceland	India
Indonesia	Iran	Iraq
Ireland	Israel	Italy
Jamaica	Japan	Jordan
Kazakhstan	Kenya	Kiribati
Korea, DPR	Korea, Republic	Kuwait
Kyrgyzstan	Laos	Latvia
Lebanon	Lesotho	Liberia
Libya	Liechtenstein	Lithuania
Luxembourg	Macedonia, FYR	Madagascar
Malawi	Malaysia	Maldives
Mali	Malta	Marshall Islands
Mauritania	Mauritius	Mexico
Micronesia	Moldova	Monaco
Mongolia	Montserrat	Morocco
Mozambique	Namibia	Nauru
Nepal	Netherlands	New Zealand
Nicaragua	Niger	Nigeria
Niue	Norway	Oman
Pakistan	Palau	Panama
Papua New Guinea	Paraguay	Peru
Philippines	Poland	Portugal
Qatar	Romania	Russian Federation
Rwanda	San Marino	Sao Tome and Principe
Saudi Arabia	Senegal	Seychelles
Sierra Leone	Singapore	Slovakia
Slovenia	Solomon Islands	Somalia
South Africa	Spain	Sri Lanka
St Kitts and Nevis	St Lucia	St Vincent and the Grenadines
Sudan	Suriname	Swaziland
Sweden	Switzerland	Syria
Tajikistan	Tanzania	Thailand
Togo	Tokelau	Tonga
Trinidad and Tobago	Tunisia	Turkey
Turkmenistan	Tuvalu	Uganda
Ukraine	United Arab Emirates	United Kingdom
United States of America	Uruguay	Uzbekistan
Vanuatu	Venezuela	Viet Nam
Wallis and Futuna Islands	Yemen	Yugoslavia
Zaire	Zambia	Zimbabwe

Reference Document: 420-TP-015-001, February 1997.

Class

SpatialKeywordClass

SSAPAlgorithmPackageName

Name of the Algorithm Package (from AP) that this component is associated with. An SSAPComponent may only be associated with ONE AP.

Class

SSAPComponent

SSAPAlgPackageVersion

Versions of the Algorithm Package (from AP) that this SSAP Component is associated with. An SSAPComponent can be associated with multiple AP versions.

Class

SSAPComponentAPVersion

SSAPInsertDate

Data of insertion to the Data Server.

Class

SSAPComponent

StandAloneDocumentPointer

Data model logical reference to a Stand-Alone Document.

Content Source: DSS
Constraints: if guide exists, this must exist.

Reference Document: 420-TP-015-001, February 1997.

Class

StandAloneDocument

StartDate

Date of Advertisement creation.

Class

AdvertisementMaster

StartOrbitNumber

Orbit number at start of data granule.

Content Source: PGE
Constraints: StartOrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.
Reference Document: 420-TP-015-001, February 1997.

Class

OrbitCalculatedSpatialDomain

StateProvince

The state or province of the address.

Content Source: DP
Domain:
Free Text
Reference Document: 420-TP-015-001, February 1997.

Class

ContactAddress

StopOrbitNumber

Orbit number at end of data granule.

Content Source: PGE
Constraints: StopOrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.
Reference Document: 420-TP-015-001, February 1997.

Class

OrbitCalculatedSpatialDomain

StorageMedium

The quantity and type of medium on which the distributed data are stored.

Content Source: DAAC
Domain:
35 mm Slides
Hardcopy Plots
Magnetic Disks
Magnetic Tapes
Microfiche Slides
Microfilm Reels

Optical Disks

Reference Document: 420-TP-015-001, February 1997.

Class

StorageMediumClass

StreetAddress

An address line for the address, used for mailing or physical addresses of organizations or individuals who serve as points of contact.

Content Source: DP; DAAC
Alias: Address

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ContactAddress

SuggestedUsage

This attribute describes how this collection or granule may be best used to support earth science/global change research.

Content Source: DP

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

ECSCollection

SWDateLastModified

Date and time when the software was last modified.

Content Source: DP
Constraints:
Mandatory if any modification made.

Reference Document: 420-TP-015-001, February 1997.

Class

AlgorithmPackage

SWDevelopmentStandardPointer

Data model logical reference to Software Development Standard document.

Content Source: DSS
Constraints:
If SW Development Standard exists then SWDevelopmentStandardPointer must exists.

Class

SWDevelopmentStandard

SWVersion

The actual version of the source code in the SSAP.

Class

AlgorithmPackage

SystemDescriptionPointer

Logical reference to the System Description document.

Content Source: DSS
Constraints:
If System Description exists then SystemDescriptionPointer exists.

Class

SystemDescription

TelephoneNumber

Number of org or indiv who is point of contact. The general format of the number includes country, area, and STD codes, as required for the full telephone number. Multi-extensions should be single entries rather than part of a single entry text.

Content Source: DAAC; DP
Constraints:
Phone is dependent upon TelephoneNumberType='Facsimile', 'TDD/TTY', 'Voice'

Reference Document: 420-TP-015-001, February 1997.

Class

Telephone

TelephoneNumberType

The type of telephone number being provided in this instance of the phone number, in order to reach the organization or individual who serves as a point of contact. Voice number is used to speak to the org or individual, the TDD/TTY number which hearing-impaired can converse with org or indiv., or the fa(x)csimile number of the org's or indiv.

Content Source: DAAC; DP
Alias: Contact Voice Telephone
Contact TDD/TTY Telephone
Contact Facsimile Telephone

Domain:

Voice
TDD/TTY
Facsimile

Reference Document: 420-TP-015-001, February 1997.

Class

Telephone

TemporalKeyword

This attribute specifies a word or phrase which serves to summarize the temporal characteristics referenced in the collection.
i.e. Monthly Composite, Annual Mean.

Content Source: DP

Domain:

Free Text

Reference Document: 420-TP-015-001, February 1997.

Class

TemporalKeywordClass

TemporalRangeType

This attribute tells the system and ultimately the end user how temporal coverage is specified for the collection, granule, or event.

Content Source: DP

Domain:

Periodic - Regularly occurring periods of equal time.

Point In Time - A single date and time, usually used for in-situ measurements.

Continuous Range - A single continuous range of time with a discrete start date time and stop date time.

Discontinuous Multiple Range - A span of time with irregular temporal coverage gaps, requiring the use of multiple start/stop datetime pairs to denote the complete coverage.

Multiple Point In Time - Multiple occurences of single date and time points.

UTC - Coordinated Universal Time

UT - Universal Time

Reference Document: 420-TP-015-001, February 1997.

Class

Temporal

TemporalType

The type of temporal characterization.

Class

TemporalType

TestPlanPointer

Data model reference to document specification.

Content Source: DSS
Constraints:
If Test Plan exists then TestPlanPointer exists.

Described, in DID 311, as an attribute of class TestPlan.

Class

TestPlan

TimeofDay

The hour (and optionally minute, or minute and second) of the day. This attribute is used to specify a single point in time covered by a data collection, granule, or event. In the GSFC_CZCS collection this would reflect the Pass_time which is the time of the first scan of the scene.

Content Source: DP(collection);PGE(granule)
Constraints:
TimeofDay is mandatory if SingleDateTime class is used.

Reference Document: 420-TP-015-001, February 1997.

Class

SingleDateTime

TimeType

This attribute provides the time system which the values found in temporal subclasses represent.

Content Source: DP

Domain:

UTC - Coordinated Universal Time

UT - Universal Time
Reference Document: 420-TP-015-001, February 1997.

Class

Temporal

Title

The full title of the document.

Content Source: DP
Constraints: manditory for all documents
Domain:
Free Text
Reference Document: 420-TP-015-001, February 1997.

Class

Document
AdvertisementMaster

UniqueID

Attribute for internal use only.

Content Source: IOS

Class

AdvertisementMaster

UpperTitle

Upper case of Title.

Content Source: IOS

Class

AdvertisementMaster

UserCommentDocumentPointer

Data model logical reference to User Comment Document.

Content Source: DSS
Constraints: User comment document must exist.
Reference Document: 420-TP-015-001, February 1997.

Class

UserCommentDocument

ValidationDocumentPointer

Data model logical reference to Validation Document.

Content Source: DSS
Constraints: Validation document must exist.

Class

ValidationDocument

VersionID

Version identifier of the data collection.

Content Source: DP

Reference Document: 420-TP-015-001, February 1997.

Class

CollectionDescriptionClass

VerticalSpatialDomainType

This attribute describes the type of the area of vertical space covered by the locality.

Content Source: DP(collection);PGE(granule)

Domain:

Atmosphere Layer
Cloud Layer
Maximum Altitude
Maximum Depth
Minimum Altitude
Minimum Depth

Reference Document: 420-TP-015-001, February 1997.

Class

VerticalSpatialDomain

VerticalSpatialDomainValue

This attribute describes the extent of the area of vertical space covered by the granule. Must be accompanied by an Altitude Encoding Method description. The datatype for this attribute is the value of the attribute VerticalSpatialDomainType. The unit for this attribute is the value of either DepthDistanceUnits or AltitudeDistanceUnits.

Content Source: DP(collection);PGE(granule)

Domain:

TOA - Top of Atmosphere

SFC - Surface of ocean or land, regardless to topography.

Cloud - Any cloud layers found.

Tropos - Troposphere. Must be accompanied by Altitude Endocing Method description. (default: 0 to 10 km)

Atmos - Troposphere + Stratosphere. Must be accompanied by Altitude Encoding Method description. (default: SFC to 30km)

Stratos - Stratosphere. Must be accompanied by Altitude Encoding Method desciption. (default: 10 to 30km)

Ex - Exosphere. Must be accompanied be Altitude Encoding Method description. (default: 700km)

Mid-Atmos - Upper troposphere to mesopause. Must be accompanied by Altitude Encoding Method description. (default: 10-120km)

Near_SFC - Near surface layer (within boundary layer). Must be accompanied by Altitude or Depth Encoding Method description. (default: SFC to +- 1km)

Plume_col - Vertical extent of volcanic eruption plume. Must be accompanied by Altitude Encoding Method description for this volcanic eruption.

Plume_top - Top of volcanic eruption plume. Must be accompanied by Altitude Encoding Method Description for this volcanic eruption.

Sub_SFC - Layers immediately beneath land surface.

TOO - Top of Ocean (oceanic mixed layer)

Atmosphere Profile - Data extends vertically through atmosphere.

Reference Document: 420-TP-015-001, February 1997.

Class

VerticalSpatialDomain

WestBoundingCoordinate

Western-most coordinate of the limit of coverage expressed in longitude.

Content Source: DP(collection);PGE(granule)
Constraints: WestBoundingCoordinate => -180.0
Constraints: WestBoundingCoordinate <= +180.0

Reference Document: 420-TP-015-001, February 1997.

Class

BoundingRectangle

ZoneIdentifier

The appropriate numeric or alpha code used to identify the various zones in this grid coordinate system. See domain values of coordinate system for constraints on the zone numbers.

Content Source: DP(collection);PGE(granule)
Constraints: mandatory if grid coordinate system is used.

Domain:

Universal Transverse Mercator (UTM) - 1<= UTM Zone Number <=60 for the Northern Hemisphere; -60 <= UTM Zone Number <= -1 for the Southern Hemisphere.

State Plane Coordinate System of 1927 - Domain values for identifier of the SPCS zone are four digit numeric codes and codes for State Plane Coordinate Systems.

State Plane Coordinate System of 1983

ARC Coordinate System - 1<= ARC System Zone Identifier <= 18

Other Grid System

Reference Document: 420-TP-015-001, February 1997.

Class

ZoneIdentifierClass

This page intentionally left blank.